

ERYSIPELAS

with

NOTES ON EIGHTY CASES

Thesis presented for the Degree of M.D. of Edinburgh  
University

by

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## I. INTRODUCTION.

Having been Assistant Resident Medical Officer at the City Fever Hospital, Edinburgh during the Winter of 1901 - 1902, and having during that time had the opportunity of seeing and treating nearly a hundred cases of Erysipelas, I propose in this Thesis to consider how far these cases agree with modern views of Erysipelas, and to give a brief account of the Pathology, Symptoms, Course, Complications and Treatment of the Disease.

Erysipelas is a subject which is very insufficiently described in British Text-books of Medicine and Surgery, but French and German writers describe it much more fully, and my chief authority in reading up the subject has been the account written by Dr Hermann Lenhartz of Hamburg in Nothnagel's Encyclopedia of Practical Medicine, English Edition published in 1902. Other references will be given as they occur.

In making numerical statements of my cases, I have not included all the cases I have seen, but have excluded some who were in Hospital when I came here and whom I only saw as convalescents, and others who have come in recently and are still in Hospital./

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Hospital. But in order to have a convenient number, I have taken eighty consecutive cases between these limits.



## II. DEFINITION AND CLASSIFICATION.

Erysipelas has been known to medical writers since the days of Hippocrates and many different definitions and classifications of the disease have been given. Hippocrates described two forms, Traumatic occurring after wounds, and Idiopathic arising without a wound.

Other writers, noticeably Trousseau, have declared that Erysipelas is always preceded by a wound though frequently a very small one. Be that as it may, the fact remains that very many cases occur without a visible wound. Fifty-six of my 80 cases had no visible wound, and the classification, though it may be scientifically inaccurate, is clinically useful, since the two types differ very greatly in their lesions and their treatment.

The division of cases into Surgical and Medical is another classification based on the same grounds. Nunneley described three forms of Erysipelas:-

1. Cutaneous.
2. Cellulo-Cutaneous or Phlegmonous Erysipelas.
3. Cellular or Diffuse Cellulitis.

Although these three forms are intimately related/



lated to one another, there is one great difference between the first and the other two, and this is, that in Cutaneous Erysipelas there is usually no pus formation, whilst the other two form, as Erichsen points out, "are essentially processes of diffuse suppuration."

Recent bacteriological investigations have shown, as I shall describe, that the three forms in spite of this great difference, are really due to the same organism, the *Streptococcus Pyogenes*, and thus is explained the relation they bear to one another. This being so, it is evident that the third form, the cellular, need not be called Erysipelas as it differs in no way from an ordinary Suppurative Cellulitis.

But the first form the Cutaneous, is so definite and distinct in type that it may well be considered a definite specific disease, and it is this form that is called true Erysipelas and on which experimental work has been done.

The second form, the Cellulo-Cutaneous or Phlegmonous Erysipelas is a combination of the first and third and should be considered not as a separate form, but as true Erysipelas complicated by Suppurative Cellulitis.



### III. CAUSE OF THE DISEASE - BACTERIOLOGY.

The essential cause of Erysipelas is undoubtedly an organism.

The contagiousness of the disease, the definite course it runs, always following the same type, the very frequent association with an external injury and the well defined origin from the actual point of injury, would all lead us to expect that the cause is an organism, which on its introduction into the body, produces its definite effects.

The fact that Erysipelas has been practically excluded from the Surgical Wards of our Hospitals since the introduction of antiseptic treatment of wounds, is an additional argument in favour of the theory.

This organismal theory was first suggested by Henle in 1840, and in 1865 Trousseau in describing Erysipelas stated that, "the development of the process requires an exciting cause which plays the principal and not the subordinate role in the origin of the disease".

Other investigators held similar views, but Fehleisen in 1883, was the first to prove that the cause of Erysipelas is a Streptococcus which he called/



called the *Streptococcus Erysipelatis*.

His experiments were briefly as follows:-

1. He demonstrated the presence of chains of micrococci in the lymphatic spaces in the skin of patients suffering from true uncomplicated Erysipelas.
2. With the most careful precautions against extrinsic bacterial contamination, he removed small pieces of skin from these patients and obtained from them pure cultures of streptococci in various media. From these, subcultures were made, in some cases up to thirty generations.
3. Pure cultures of these streptococci injected subcutaneously into the ears of rabbits, produced a typical erysipelas in which streptococci were found in the lymph spaces in the affected skin.
4. He inoculated with pure cultures of his streptococci seven patients suffering from Lupus or inoperable new growths, and six of them developed typical Erysipelas. (The seventh had previously had repeated attacks of Erysipelas and had probably acquired a temporary immunity).

By these experiments which not only conform with Koch's Postulates, but also include reinoculation in man, he proved the causal relationship to Erysipelas of the *Streptococcus* he called the *Streptococcus Erysipelatis*.

Microscopically and in cultures, Fehleisen's *Streptococcus* is identical with the *Streptococcus Pyogenes* found in many suppurative conditions, and much discussion has taken place as to whether they are really distinct species or not.

Fehleisen/



Fehleisen himself thought that they were dissimilar and Rosenbach in 1884, agreed with him and pointed out minute differences in cultures of the two organisms.

Hajek in 1886 considered the two forms to be identical, but that they differed in their manner of spreading through the body, the *Streptococcus Erysipelatis* spreading through the lymphatics, the *Streptococcus Pyogenes* invading the tissues.

Clinically, the identity of the two Organisms is suggested by the intimate relationship of Puerperal Fever, (now known to be due to the *Streptococcus Pyogenes*), and Erysipelas, and physicians to the Lying-In Hospitals in London were impressed with the frequent coincidence of the two diseases as early as the end of the eighteenth century. Also, in 1861 the Hospital St. Louis had so many cases of Puerperal Fever that the wards were closed, no more cases taken in, and the patients removed elsewhere. The wards were then occupied by thirty-two women suffering from chronic skin diseases, and many of these developed Erysipelas. In 1875, Spencer Wells recorded the case of a physician, who, whilst suffering from a mild attack of Erysipelas of the fore-arm/



fore-arm, attended two confinement cases, both of whom developed puerperal fever and died.

Krauss in 1872 recorded the case of a midwife, who, whilst recovering from facial erysipelas, attended ten confinements, all of whom developed puerperal fever and eight died.

Such occurrences were so common, that Nunneley as early as 1849, stated that the exciting cause of erysipelas and puerperal fever was the same.

In addition to this clinical evidence of their identity, further experimental work has been done.

Von Eiselsberg with cultures of streptococci pyogenes obtained from phlegmonous suppuration, produced erysipelas in the ears of rabbits. Widal in 1889 injected into the veins of rabbits pure cultures of streptococci pyogenes and with cultures made from the hearts' blood of these animals, he produced erysipelas in the ears of other rabbits.

Von Eiselsberg, Simone, von Noorden and Widal all examined the pus of abscesses occurring in cases of erysipelas and found streptococci identical with those found in the erysipelalous skin of the same patients.

Hoffa produced Erysipelas in a rabbit's ear with a culture from the pus from a purulent inflammation/



flammation of the knee occurring in the course of a true Erysipelas Ambulans.

Bulloch in the Transactions of the British Institute of Preventive Medicine shows how the effect of inoculating susceptible animals, as rabbits, with the streptococcus pyogenes varies considerably. Thus "a transient redness at the point of inoculation may be all that is seen. At other times, there may be a severe erysipelas or a phlegmon. The animal may die with a large local lesion, or death may ensue from a rapidly fatal septicaemia, while locally, nothing may be found, or at most, a slight gelatinous oedema."

But the most valuable experiments were done in 1896 by Petruschky, who performed them on man. With pure cultures of Streptococci Pyogenes from the fresh pus of a peritonitis in man, he inoculated by scarifications another man, and produced a typical Erysipelas which extended over chest and back, and was accompanied by high fever. This experiment, he repeated several times with positive results, and thus he proved that Streptococci from non-Erysipelatous affections in man were able to produce Erysipelas when transmitted to another man. When we consider the large amount of experimental and/



and clinical evidence, of which I have mentioned only what appears to me to be the most important, we must, I think, agree with Bulloch who, writing in the Lancet in 1896 on "The Role of the Streptococcus Pyogenes in Human Pathology", states, "The opinion now almost universally held is that the grounds upon which distinctions have been founded are insufficient, and that there is but one species of streptococcus which plays a part in human pathology, viz., that generally termed Streptotoccus Pyogenes. Clinical and experimental evidences unite to show that diversity of lesion may be explained otherwise than by the presupposition that the infecting micro-organisms differ in species."

He also states that "There are four main factors, the variations of which determine the nature and extent of streptococcic lesions.

1. The first and most important of these factors is the extraordinary variability in the virulence of the microbe. Starting from a streptococcus harmlessly inhabiting the buccal cavity, we may pass experimentally through all stages till we obtain an organism of such exalted virulence as to be capable of producing a rapid or general infection. Any one of such experimental lesions finds its parallel in human pathology.
2. A variation in the site and depth of the infection produces a difference in the nature and severity of the lesion; this seems to explain why at one time an erysipelas is developed and at another a phlegmon.



3. Varying resistance on the part of the body is the third factor in the production of diversity of lesion; witness the severe streptococcic lesions met with in advanced cases of Diabetes and Bright's Disease.
4. The association of the Streptococcus Pyogenes with other microbes, pathogenic or non-pathogenic."

The first and third of these factors, the varying virulence of the organism and the varying resistance of the body, are, I think, self-evident, and as regards the latter, it is interesting to note that in my eighty cases, the six which ended fatally were all weakened by previous or coincident disease. As regards the fourth factor, the association of other organisms, only one observer, Jordans, has found another organism in Erysipelas, the Staphylococcus Pyogenes Aureus, and his bacteriological methods were open to objection. But in Diphtheria and Typhoid Fever, and Phthisis, this factor is very evident.

In Erysipelas, it is the second factor, "the site and depth of the infection" that is well exemplified.

In my eighty cases, nineteen followed a definite wound and in all of these in addition to the Cutaneous Erysipelas, there was suppuration and discharge of pus.

In/



In the remaining sixty-one cases, there was either no visible wound or only a very superficial scratch or abrasion, and in only seven of these, was there pus formation.

It would therefore seem that the *Streptococcus Pyogenes* requires to reach to a certain depth in the tissues before it can produce suppuration, and that when it only penetrates into the skin, it produces the condition which we call Erysipelas and which I shall shortly describe.



#### IV. PATHOLOGICAL CHANGES IN THE SKIN IN ERYSIPELAS

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The Pathological changes produced in the skin in Erysipelas, described briefly, are hyperaemia and oedema along with a dense small celled infiltration. The fibres of the cutis are separated by the exudation so that the skin as a whole appears considerably thickened, and the stratum corneum is lifted up in places to form vesicles, blebs or bullae filled with clear fluid rich in cells and in which Streptococci can be easily demonstrated. In the subcutaneous tissue, dense accumulations of round cells may be seen between the groups of fat cells.

In a microscopic section of the sharp border of erysipelatous skin, Bulloch describes three main areas as seen from centre to periphery.

1. "The area of resolution where the process is beginning to subside; the cocci are comparatively few in number and in some places have entirely disappeared, but there is still some round celled infiltration.
2. The area of active inflammation corresponding to the red part; there, the streptococci are abundant in the lymph spaces and vessels, and there is a very dense round celled infiltration.

3./



3. The area of commencing coccic invasion which extends for a short distance peripherally to the red area; the cocci are numerous and inflammation is just commencing."

As before stated the streptococci are found in the lymphatic vessels and spaces of the skin and not in the blood vessels. This accounts for the great rarity of Ulcerative Endocarditis as a complication of Erysipelas.



V. MODE OF ENTRANCE OF THE ORGANISM.

It has sometimes been contended that in all cases of Erysipelas there must be a wound of some sort, possibly microscopic, by which the Streptococcus enters; but while this may be so, I think that there is possibly another explanation. If we consider cases of so-called Idiopathic Erysipelas in which there is no visible wound, we notice two things. Firstly, that nearly all such cases occur in the face. Secondly, that the majority of such face cases have their origin from the eyes, the nose, the lips, or the ears, all of which are situations where the skin is thinned and offers less resistance to the entrance of the organism, and perhaps no further reduction is necessary and the Streptococcus can pass through such weak places. At the same time, it is open to say that these weak places are more easily injured and the wounds may be so slight as to escape the most careful observation. Be this as it may, it must be the presence of these weak places that determines why Erysipelas is so common on the face and so uncommon elsewhere unless accompanied by suppurative cellulitis as after a wound./



wound. Also whether the Streptococcus passes through the thinned uninjured epithelium, or through an invisible wound in it, it can only penetrate very superficially and therefore produces the superficial, cutaneous condition of Erysipelas, rather than the suppuration it would set up if admitted to a deeper level.

Of my eighty cases, sixty-two were face cases, and forty-seven of these had no visible wound.

The origin of the Erysipelas in these forty-seven cases was as follows:-

- 14 Unknown
- 11 Bridge of nose
- 9 Eyes
- 8 Ears
- 3 Side of Neck
- 2 Nostril.

These figures are based on the statements of patients and not from my own observations and are therefore not very reliable and I am inclined to think that the 11 said to have started on the bridge of the nose, really arose from one or other eye, which is the commonest seat of origin in the cases which I have had the opportunity of seeing from the commencement. Also, when Erysipelas originates from an eye, it is nearly always at the inner canthus and the bridge of the nose is the first part to/



to be affected and likely to attract the attention of the patient. Lenhartz considers that Facial Erysipelas frequently arises in the throat, the facial condition developing in immediate continuation with the inflammation of the mucous membranes of the nostril or lachrymal duct, appearing first round the nostril or inner canthus of the eye and being preceded by sore throat or coryza. I have not met with any such cases, though two of my patients gave a history of sore throat. I should imagine that the throat condition has generally cleared up before patients come in to Hospital.

Such a condition was certainly recognised by Hippocrates, who, in one of his aphorisms on Erysipelas states, "For superficial erysipelas to turn inward is not a good sign; for internal erysipelas to become superficial is a good sign."

In Erysipelas of the limbs, the origin is practically always from a wound, and suppuration generally complicates the erysipelas. But if the wound is only very superficial, then true cutaneous erysipelas results without suppuration, as in two of my cases, the first starting from a blister on the big toe, the second from a very superficial abrasion in the bend of the ankle caused by an ill-fitting boot.



VI. SIGNS AND SYMPTOMS AND COURSE OF THE FEVER IN  
ERYSIPELAS.

Incubation Period.

No definite statement can be made as to the length of the incubation period in erysipelas. In traumatic cases in which it is alone possible to estimate it at all, it is found to vary considerably, but there is no doubt that in some cases it is very short.

Thus, in Fehleison's inoculation experiments, in one case the incubation period was only fifteen hours, whilst in others it was twenty-three, thirty or forty-seven hours.

In 41 cases of traumatic erysipelas recorded by Roger, it varied from seven hours to twenty-two days.

In cases where the incubation period appears to be long, it is probable that infection occurs at a later date than the initial wound, for as long as the wound is unhealed and exposed, it is liable to be infected at any time. Two of my cases had facial erysipelas starting from scalp wounds incurred at least six weeks previously.



Three other cases of mine developed the disease within twenty-four hours of the injury.

### Invasion.

The chief symptoms and signs of the invasion period in erysipelas are shivering, vomiting and headache along with sudden rise of temperature and pain and swelling in the affected part.

### Shivering:-

Is the most common symptom and is nearly always present. It may be merely a sensation of "feeling cold" or it may amount to a rigor, but in some form or other nearly all my cases experienced it.

### Vomiting:-

Occurred as a symptom of the invasion period in thirty per cent. of my cases.

### Headache:-

Is a fairly common symptom, but very much less so than shivering.

### The Temperature.

As a rule the temperature rises suddenly as is well shown in the charts of Relapse cases occurring in hospital, which I shall give later, but it may not/



not reach its maximum of 104 or 105 until the second or third day. Much discussion has taken place as to whether the rise of temperature precedes or follows the local changes in the skin. Trousseau asserts that the dermatitis appears first, whilst Roger says the fever is the first to appear. None of my cases gave me the opportunity to observe this in their first attack, but in the relapses that occurred in Hospital, it always appeared to me that the rise in temperature preceded any local manifestations of recommencing disease. In these cases, the usual course of events was that the patient complained first of feeling cold; his temperature would then be taken and be found to be up, and the dermatitis became evident in a few hours.

#### Duration of the Fever.

As the erysipelas spreads, the temperature remains up and corresponds very exactly to the cutaneous affection, rising with every marked advance and falling with every temporary cessation. In Facial Erysipelas, which I shall describe more fully later, the duration of the fever is from six to nine days, most commonly eight.

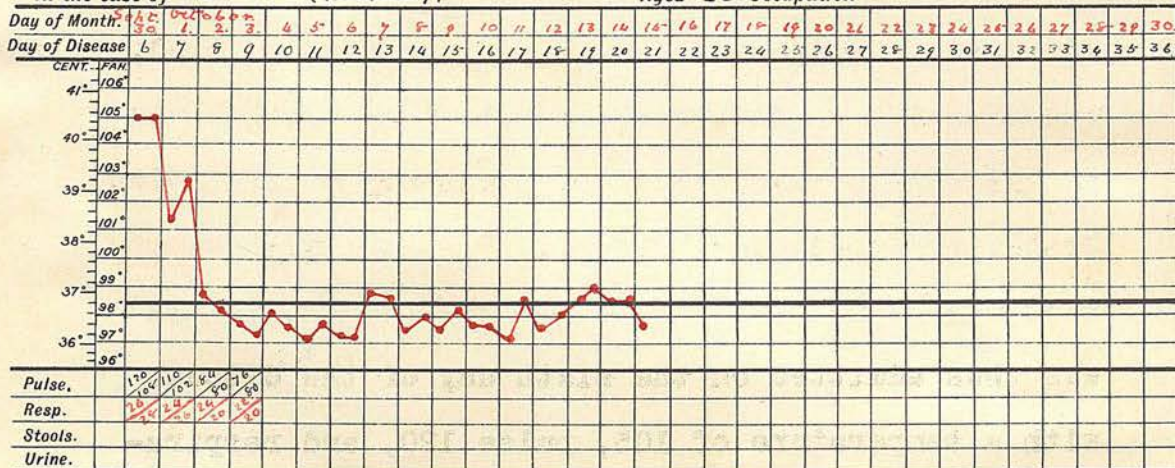
In Traumatic cases, where there is always sup-  
puration/



# Case 60

Records of Temperature, Pulse, Respiration, Stools and Urine, from Day of  
In the case of M. C. (Female). Aged 20. Occupation

18





puration, the temperature is of a more remittent type than in Facial Erysipelas, where it is generally continuous. The duration of the fever in traumatic cases varies very considerably as it seems to depend on the extent of the wound and the amount of suppuration present.

In Facial cases following a wound, the duration is much less than in the so-called Idiopathic ones. In Erysipelas Migrans where the condition spreads down the neck on to the back, and down the arms or legs, the fever lasts just as long as the disease does, in some cases for six weeks or more.

#### Termination of the Fever.

In Face cases this is usually by crisis, but sometimes it is by lysis.

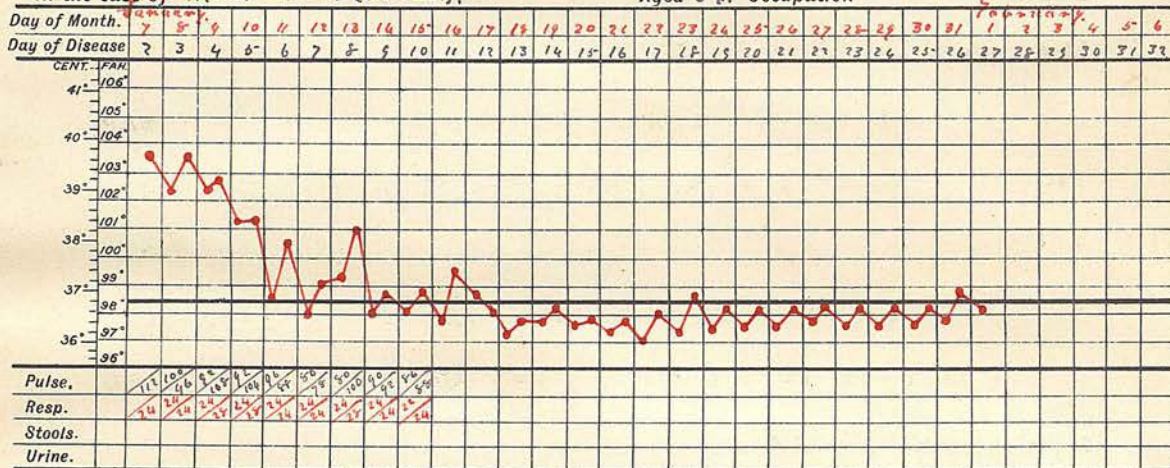
The chart of Case 60 shows the termination by crisis and is also typical of Facial Erysipelas as admitted to hospital. The patient, a girl of 20, was admitted on September 30th with characteristic facial erysipelas. She had a history of shivering, headache and sickness on September 25th and her face was noticed to be swollen the next day. She was thus admitted on the sixth day of the disease with a temperature of 105, pulse 120, and respiration/



Case 37.

Records of Temperature, Pulse, Respiration, Stools and Urine, from Day of  
In the case of M. F. (Female). Aged 34. Occupation

18



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tion 25. On the day after admission, being the seventh of the disease, the temperature began to fall in the morning, was up a little in the evening, the so-called "critical perturbation", and on the next day, reached normal with a corresponding fall in pulse and respiration to 80 and 20. She then made an uninterrupted recovery.

Case 37 shows termination by lysis. This was also a case of typical facial erysipelas, but not so severe as the other one. She was admitted on the second day of the disease, and her temperature began to fall on the fourth day and finally reached normal on the ninth.

### Pain.

Pain is a symptom that is always present and is often very severe, though from the appearance of a patient with facial erysipelas, one would expect the pain to be much worse than it really is. But it would seem that the pain is caused by the distension of the skin during the accumulation of the inflammatory exudation. When once the oedema has appeared and the skin is stretched, the pain is over and the swollen area can be palpated quite freely without hurting the patient. But at the advancing margin/



margin, where the skin is still being stretched, pain is always present, and this serves as a very sure guide to the direction of the advance of the disease. Thus, in one case where erysipelas began at the inner canthus of the left eye, spread across the bridge of the nose, up the forehead between the eyebrows on to the scalp and as far back as the occiput, the pain each time I examined him was further back, and the region painful at the previous examination was found quite free from pain, although much distended. In another case which began at the occiput and in which the painful part was always the lower edge, the erysipelas spread down the back of the neck, over the shoulders on to the back, not affecting the scalp at all.

In the same way, the cessation of pain is always an indication of cessation of the spread of the disease.

#### Swelling:

As might be expected the swelling is noticeable immediately after the pain is felt, and is very considerable. The skin is distended enormously. In the face, the nose becomes much thickened, the lips pouting, and the ears much swollen. The eyelids are/



are especially affected. Owing to the looseness of the skin, much fluid accumulates there; the eyes are completely closed up and the distended eyelids give a very distinct sensation of fluctuation, very different to the other parts which have a very tense, solid feeling.

That the exudation is in the skin itself or subcutaneous tissue is shown by the fact that it spreads without any regard to fascial attachments, but it always leaves out the chin where there is a special arrangement of the subcutaneous connective tissue bundles, which are there placed vertically instead of the usual interlacing, to form rhomboidal meshes.

Also, if there is an old cicatrix in the course of the erysipelas, the fibrous tissue of which it is composed can not be distended. This was very evident in one of my cases, where erysipelas started on the face and spread up on to the scalp, affecting the whole of the head. The patient had a linear cicatrix all round her head just inside the hair due to having, when a child, had a string tied tightly round her head and left on for many days until a definite wound was formed. When the erysipelas was at its height, there was a deep furrow/



furrow quite half an inch deep all round her head corresponding to this cicatrix which had not stretched with the rest of the skin, and which under normal conditions was hardly noticeable.

#### Appearance of the Skin.

The erysipelatous skin itself is of a brilliant red colour, rather darker than the eruption of Scarlatina and without the punctiform appearance of the latter. It is also very glistening and tense and hot to the touch. The margin of the affected skin is usually, but not always, very definitely raised, and is irregular in outline, the manner in which it advances having been compared by Billroth to the advance of fluids in a sheet of blotting paper.

#### Bullae.

A very characteristic sign of erysipelas is the tendency to form blebs or bullae. These are like large blisters full of clear fluid, are not loculated, and very easily burst. They are especially apt to appear in the ears, also on the cheeks and on the arms and legs in erysipelas of the limbs. Occasionally they may contain pus and this may perhaps be due to additional infection by the/



the Staphylococcus Pyogenes. If the case is untreated, the bullae dry up to form crusts which may almost cover the face in some cases, giving the appearance of confluent smallpox.

#### The Pulse:

Is always rapid during the course of the fever, from 120 to 130 or more, but slows down concurrently with the decline in temperature.

#### Respiration:

Is also raised proportionately to the temperature and pulse, 28 to 34 being about the usual rate during the fever.

#### The Urine:

Is scanty, high coloured and yields a copious deposit of urates on standing. During the acute stage of the fever it gives Ehrlich's Diazo-reaction as in Enteric Fever. There is always a small amount of albuminuria which disappears with the fall of the temperature, but actual nephritis is rare. In only one of my cases was there more than a small amount of albumin, and in this one it only lasted for three days.



The Blood:

As might be expected, examination of the blood reveals leucocytosis which Moore states is greater in severe cases and in those accompanied by suppuration.

The Lymphatic Glands:

Are always slightly enlarged and in some cases very considerably so, and occasionally may suppurate but not commonly.

The Tongue:

Is much furred, and the breath is extremely offensive and foul.

Cerebral Symptoms:

Headache is nearly always present in face and scalp cases. There is generally some mental confusion and in some cases actual delusions may be present. One of my cases was convinced that her baby, born a few weeks previous to her attack of erysipelas, was dead, and she believed this until shortly before leaving the hospital, and for some time after the erysipelas had cleared up. Another case, when admitted to hospital, was very much distressed about some domestic trouble he had which appeared/



appeared to bother him much more than his erysipelas did. On referring to the matter some time later, he told me that three days after he was admitted, he decided not to worry about it any more. This date corresponded exactly to the fall of his temperature and termination of the attack.

Delirium is fairly common, occurring in 16 of my cases and in 3 of these, it was wildly maniacal. In very severe cases, there may be lethargy and coma, especially in phlegmonous erysipelas.

In two of my cases there was very marked depression amounting almost to melancholia, but eventually clearing up.

In another case, a neurotic woman, the delirium which occurred during her attack of facial erysipelas, never subsided and she passed into a state of acute mania and was removed to an Asylum where she died a few months later. In her case, the attack of erysipelas was only a mild one, quite cleared up and was not followed by any relapses, but appeared to upset her rather unstable mental equilibrium which she never regained.



## VII. TYPES OF UNCOMPLICATED ERYSIPELAS.

### I. Facial Erysipelas:

This is by far the most common type of Erysipelas. In my eighty cases, sixty-three were face cases and of these, forty-seven occurred without any visible wound; five followed a very superficial wound, and eleven a deep wound. Of these eleven, one followed a fall on the forehead, one an operation wound on the frontal sinus, one a burn on the scalp, and the remaining eight were due to cuts on the scalp. Starting from the eyes, the nose, the ears, or the lips, the erysipelas may affect the face alone, or may involve the ears, or the scalp.

In my 63 face cases:-

45	affected	the face alone
3	"	the face and ears
4	"	the face and scalp
7	"	the face, ears and scalp.

The remaining four cases, starting in the face, spread on to the neck and down the back, a type known as Erysipelas Migrans or Ambulans.

In face cases following a wound, the duration of the fever is more variable, though as a rule shorter, than in cases arising without a wound. Of the 52 cases, 47 of which arose without any evident/



dent wound, 25 followed a very superficial one.

In 2 cases the fever lasted 3 days

" 1	"	"	"	" 4	"
" 1	"	"	"	" 5	"
" 4	"	"	"	" 6	"
" 9	"	"	"	" 7	"
" 15	"	"	"	" 8	"
" 7	"	"	"	" 9	"
" 1	"	"	"	" 11	"

In 2 of the remainder it lasted 28 or 25 days, and in the rest it was not ascertainable.

Of the 11 cases following a deep wound

In 3 cases the fever lasted 2 days

" 1	"	"	"	" 3	"
" 1	"	"	"	" 4	"
" 1	"	"	"	" 6	"
" 1	"	"	"	" 7	"
" 1	"	"	"	" 8	"

and in the remainder it could not be ascertained.

The tendency to delirium during the fever is especially common in facial erysipelas and this was explained by Traube as being due to the fact that, in addition to the general influence of the fever, there is a considerable amount of irritation present in the area of the trigeminal nerve "the sensory fibres/

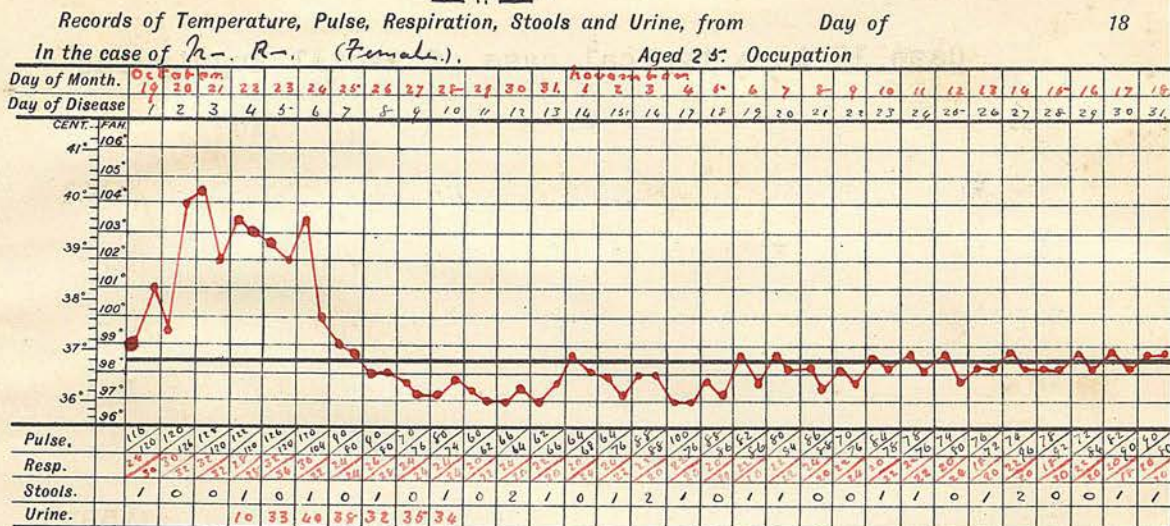


fibres of which from the shortness of their course, may transmit impulses from the periphery with the least loss of intensity." All the sixteen cases of mine who had marked delirium were face cases and three of them were so violent as to necessitate restraint being used in the form of straps, hypnotics being of no avail.

The general appearance of a patient suffering from facial erysipelas has been well described by Sir Thomas Watson, who says:- "The lips swell enormously, the cheeks enlarge, the eyes are sealed up by their oedematous and prominent lids and all traces of the natural countenance are effaced. I know of no disease, except perhaps the Confluent Smallpox, which so completely and speedily deforms and disfigures the visage of the patient. A stranger seeing a young female in the height of the disorder and revisiting her after her recovery is astonished at the change. It seems as if by some magic process, such as we read of in our nursery tales, a hideous monster has been metamorphosed into a comely damsel." Facial Erysipelas is more common in women than in men, 60 per cent. of my face cases being women.

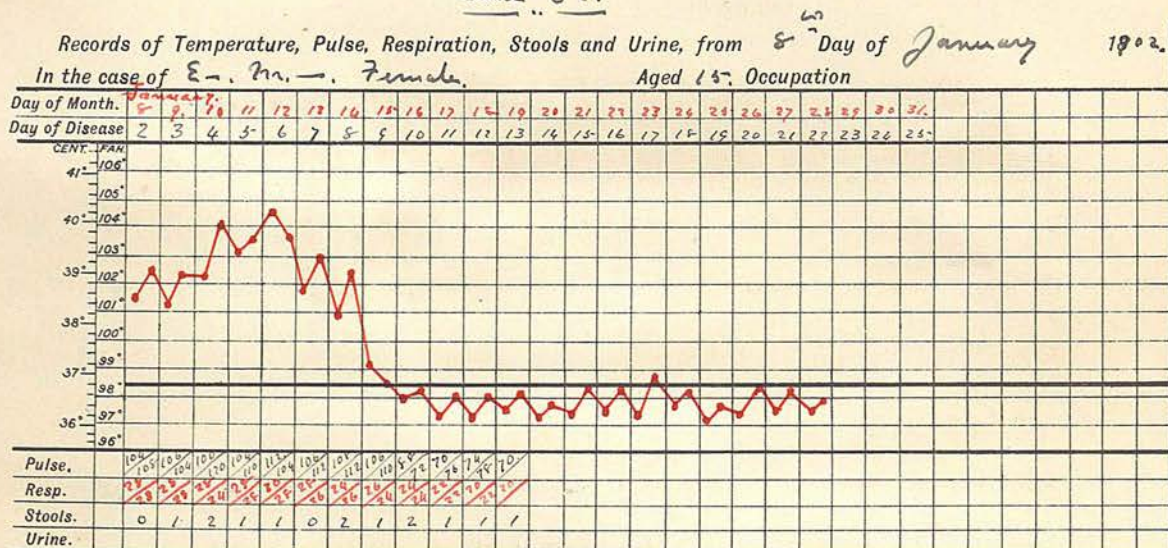


# Case 12.



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# Case 68.



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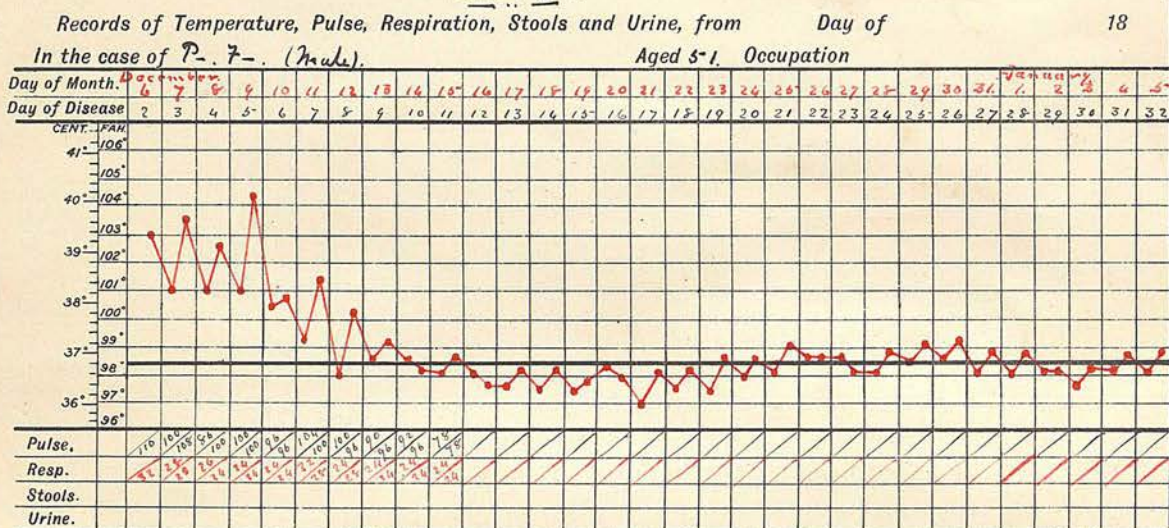


Case 12 is a typical case of Facial Erysipelas. The chart shows the comparatively rapid onset, though the maximum temperature was not reached until the third day of the fever. In this case the erysipelas started in the right eye at the inner canthus and spread over the face and on to the scalp. The fever lasted for six days and terminated by crisis, reaching normal on the evening of the seventh day, the pulse which had been increased to 128, slowing to eighty and the respiration, which had been about thirty, falling to twenty-four. There was a considerable amount of mental confusion and partial delirium. The patient was discharged on November 21st, her temperature having been normal since October 25th.

Case 68 is another typical case of Facial Erysipelas. Patient, a girl of 15, complained of pain and swelling in right eye on January 7th. She was admitted to Hospital on the next day with the right eye much swollen. The Erysipelas spread over the whole of her face, both eyes were closed up and there were large blebs on her cheeks. Her temperature rose as the condition spread and on the 6th day of disease reached 104.6, with pulse rate/



Case 20.



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rate of 112 and respiration 30. The temperature then began to fall and on the 10th day of the attack was normal with pulse and respiration 88 and 24 respectively. She was discharged on February 5th, her temperature having been normal for twelve days. In neither this case nor the previous one was there any visible wound.

Case 25 was a case of Facial Erysipelas following a wound. Patient, a man of 51, had a cut on the face below the left eye on December 4th. The next day, he had some shivering, vomiting and headache, the incubation period here being a short one, less than 24 hours. He was admitted to Hospital the next day, December 6th, being the second day after the injury. On admission, the whole of the left side of his face was swollen and red, the nose and the right eye being affected to a lesser degree. His temperature was 103, pulse 110, and respiration 32. He had a small amount of albumin in his urine. The erysipelas spread over the whole of his face and on to the scalp. His temperature remained up, and on the evening of the 9th, being the fifth day of disease, rose to 104.2 and he became violently delirious. Chloral and Bromide had little effect on him and he had to be strapped to his bed. The next/



next morning his temperature had fallen to 100.2, pulse 96, and respiration 24, and he was quite conscious again. Two days later, the eighth day of disease, his temperature reached normal and he made an uninterrupted recovery and was discharged on January 12th.

In cases where the scalp is affected there is generally considerable loss of hair, due to exudation into the root sheath separating it from the hair follicle, but it grows again during convalescence.

There is also a complete desquamation after the acute stage of erysipelas is over and the swelling has subsided.



## II. Erysipelas of the Limbs.

As I stated before, when Erysipelas affects the limbs, it is nearly always after a wound, but cases do occur in which no visible wound can be found. In 17 of my cases, the limbs or body were affected and of these, 8 were in the upper extremity, 7 in the lower extremity, 1 affected the trunk, and in 1 the whole of the body except the head was affected. Of these 17, 9 were the result of an injury which caused a wound of considerable depth and all of these were complicated by suppuration due to the *Streptococcus Pyogenes* reaching a sufficiently deep level. Of the remaining eight, four of which followed and started from a very superficial abrasion, in only one was there pus formation and this was from a few small ulcers where the tense, distended skin had given way, whilst in the other seven, true, uncomplicated erysipelas was present.

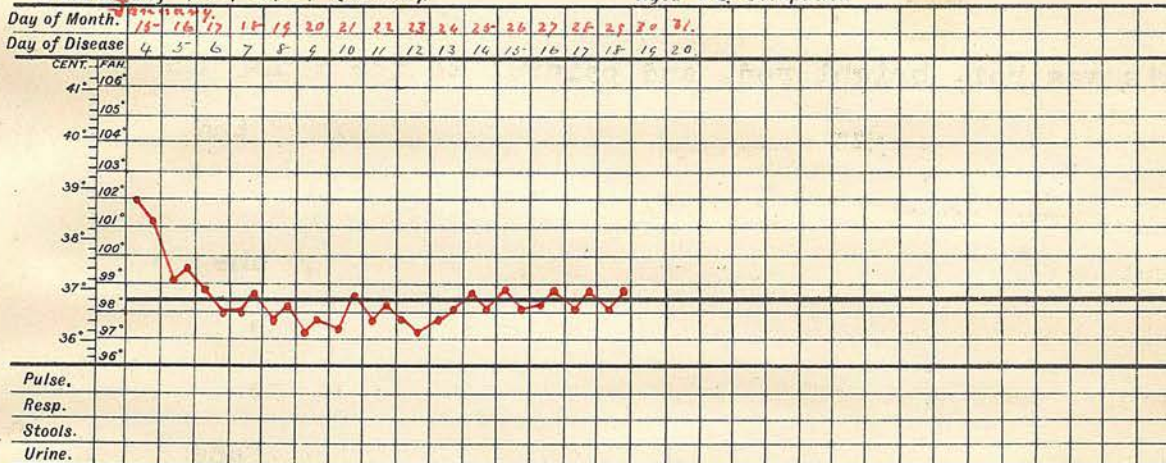
Case 47 was Erysipelas of the leg following a very superficial abrasion in the bend of the ankle. Patient, a man of 26, first noticed his leg painful on January 12th. He was admitted to Hospital on January 15th. There was a very small healed wound in the bend of the ankle joint, and the skin around this/



Case 47

Records of Temperature, Pulse, Respiration, Stools and Urine, from Day of  
In the case of J. — (Male). Aged 26. Occupation

18



YOUNG J. PENTLAND, PUBLISHER, EDINBURGH & LONDON.



this was hot, bright red, and painful to the touch, the condition extending over the lower two thirds of the leg. His temperature was 102. Next day, the temperature began to fall and reached normal on the 17th, the sixth day since the commencement. The redness and pain had somewhat diminished, but the swelling still remained, and on the anterior surface of the leg, there was a small area which had softened and gave the sensation of fluctuation. Thinking it was an abscess, I incised it and after cutting through the thickened skin, my knife passed in to a cavity which only contained clear fluid and no pus. The skin appeared to be raised up by this exudation and a probe could be passed for about two inches underneath the skin in every direction. The wound quickly healed and the swelling around subsided and patient was discharged on February 13th.

Case 78 was one in which erysipelas starting from a wound in the toe, spread up the whole of the leg, thigh and buttock. Patient, a woman of 33, had had a frost bite on her left big toe some time previously. She was unable to give the date. On February 22nd, she complained of shivering, vomiting and headache, and next day erysipelas started from the/



Case 78

Records of Temperature, Pulse, Respiration, Stools and Urine, from 3<sup>rd</sup> Day of *March*.

1802.

In the case of *A. M.* (Female).

Aged 33. Occupation



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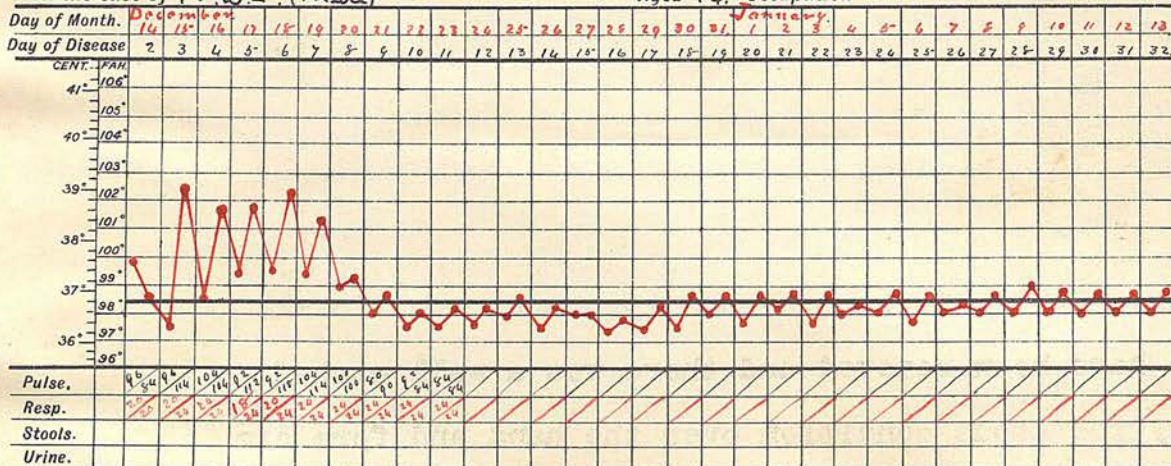
Case 27

Records of Temperature, Pulse, Respiration, Stools and Urine, from Day of

18

In the case of *P. J.* (Male)

Aged 14. Occupation



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the big toe, and spread up the foot and leg. It continued to spread and nine days later, on March 3rd, she was admitted to Hospital. The sore on her big toe was then almost healed and was quite healthy. The erysipelas had cleared up from the foot and leg, but was in her thigh, with a definite raised margin proximally. Her temperature was 102.8 and pulse 96. The erysipelas gradually advanced up the thigh, over the buttock and on to the back, and then subsided, her temperature reaching normal and remaining there on March 13th, three weeks after the commencement of the attack. She was discharged on April 15th, having been quite free from erysipelas for a month.

Case 27. Erysipelas of the arm following an injury. Patient, a boy of 14, had his hand crushed in a carpet machine on December 12th. He was taken to the Infirmary where his hand was treated and he went home. The same evening his hand was very painful, and the next day the arm was much swollen and inflamed. Admitted to the City Hospital on December 14th, two days after the injury. Three of the fingers of his left hand were found to have been removed and there was a well marked erysipelalous condition over the hand and fore arm with/



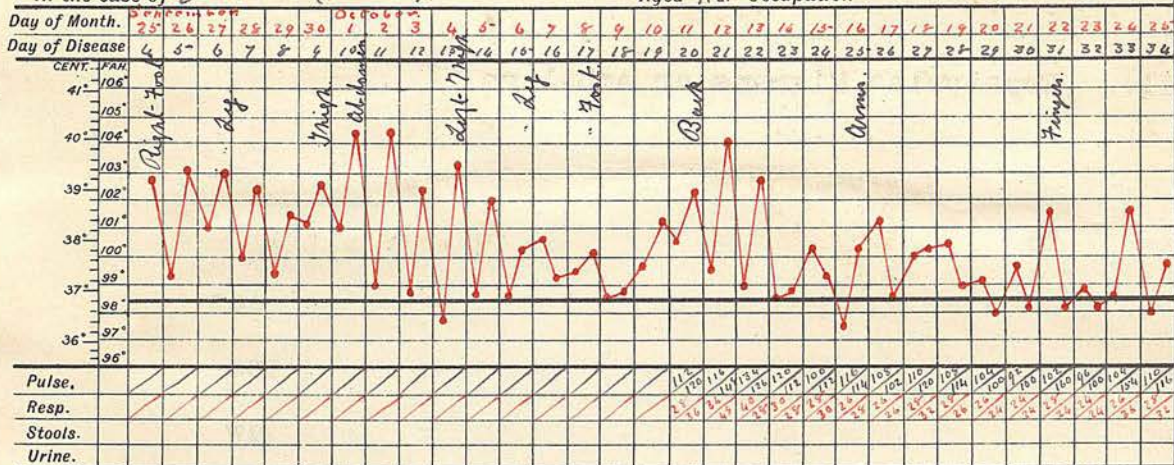
with a well defined irregular margin, and with very extensive bullae formation. There was much swelling and the skin was a brilliant red colour, tense and glistening. There was much tension of the stitches in the stumps of the fingers and pus was discharging from the wounds.

The stitches were removed and the fingers dressed and the erysipelas, after spreading as far up as the elbow, subsided and the temperature reached normal on the 9th day of the disease. He was discharged on January 18th with two fingers quite healed, the third almost so, and no trace of erysipelas. In this case, though the condition was extensive and very severe, the temperature was never very high and was remittent in type. There was no delirium and no albumin in the urine. All of this, I think, is accounted for by the free drainage present from the wounded fingers, whereby the toxaemia was diminished.



# Case 3.

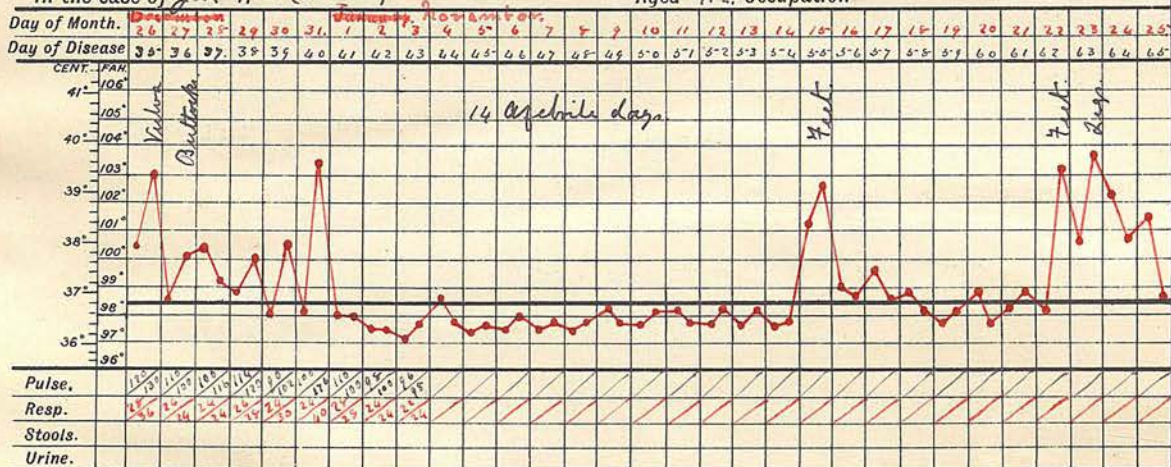
Records of Temperature, Pulse, Respiration, Stools and Urine, from 25<sup>th</sup> Day of September. 1901.  
In the case of J. 7. (Female). Aged 6 1/2. Occupation



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# Case 3

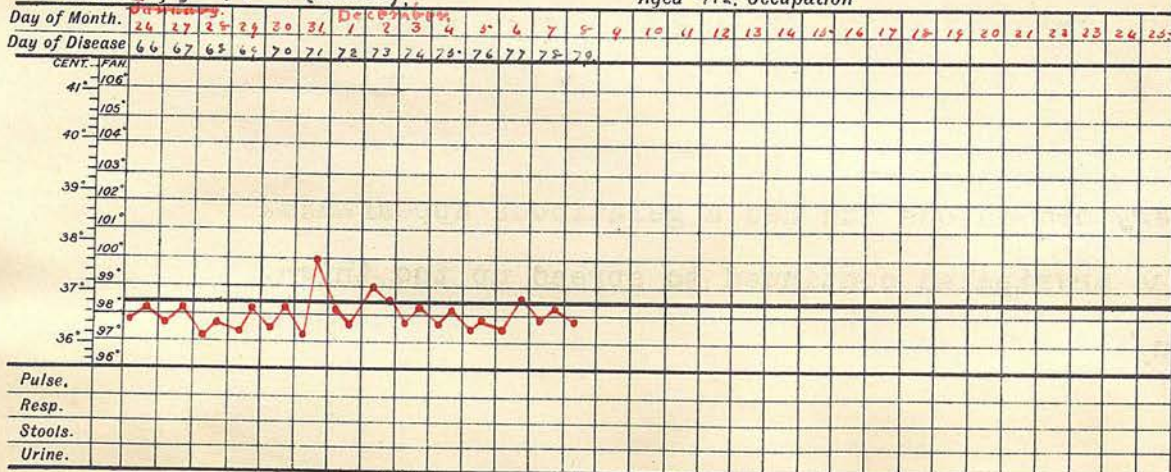
Records of Temperature, Pulse, Respiration, Stools and Urine, from Day of 18  
In the case of J. 7. (Female) Aged 6 1/2. Occupation



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# Case 3.

Records of Temperature, Pulse, Respiration, Stools and Urine, from Day of 18  
In the case of J. 7. (Female) Aged 6 1/2. Occupation



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### III. Erysipelas Migrans or Ambulans.

This is a type of erysipelas in which the disease is not limited to one part, but wanders all over the body, always, however, advancing by direct continuity. The condition may appear to be quiescent for a few days and then start again, each new spread being accompanied by a corresponding rise in temperature.

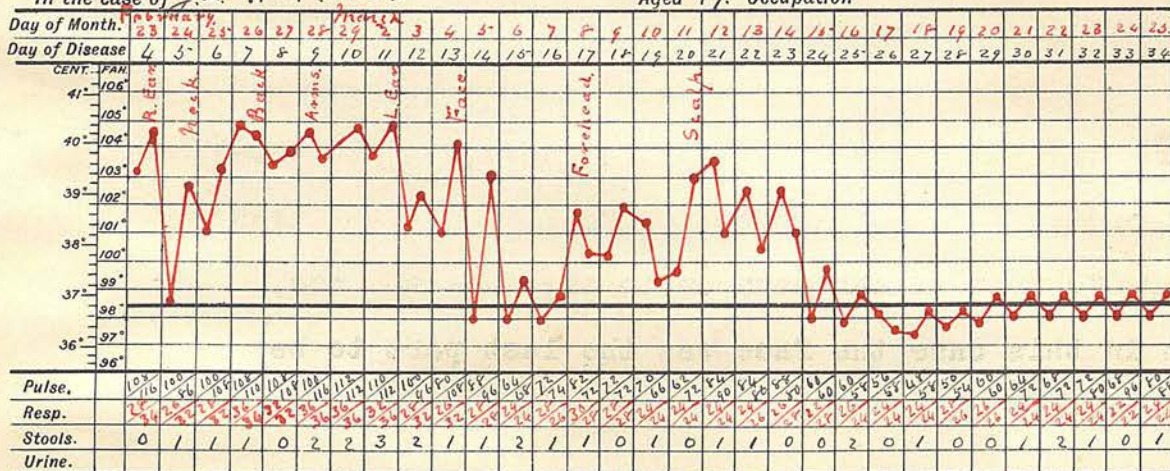
Case 3 was one of this type. Patient, a baby of 6 months, was first noticed to be ill on September 22nd, and on the following day her right foot was swollen and red. She was admitted to Hospital on September 25th, and was found to have a small and very superficial cut on the sole of the right foot, quite dry and covered by a small scab. There was a bright red erysipelalous flush over all the foot from the toes to the ankle joint. In spite of treatment the erysipelas spread up the leg and on the 30th was up to the middle of the thigh. The foot was still very much swollen and tense and an incision was made into the dorsum. No pus was found, but the skin and subcutaneous tissues were very oedematous and had a gelatinous appearance. The erysipelas continued to spread up the thigh, on/



# Case 71.

Records of Temperature, Pulse, Respiration, Stools and Urine, from Day of  
In the case of J. F. (Male). Aged 17. Occupation

18





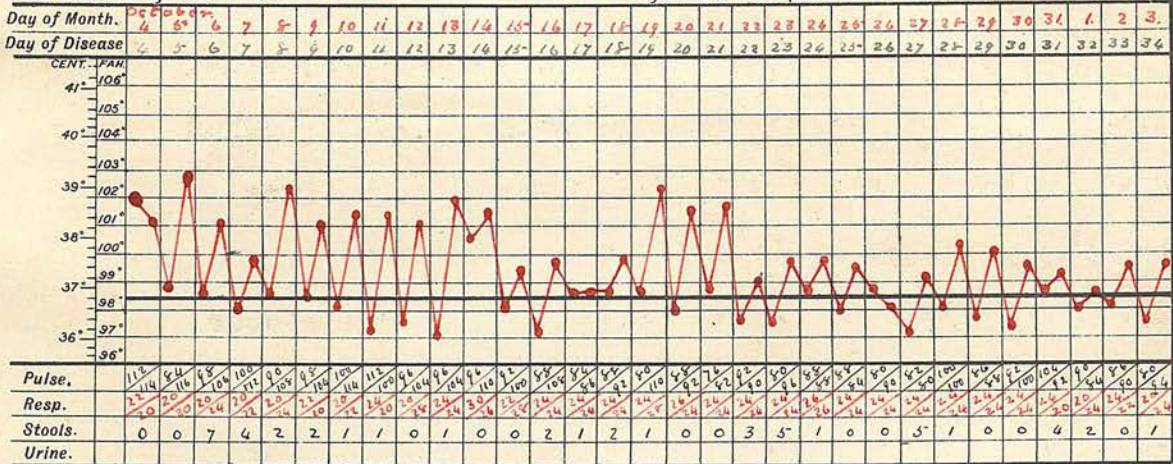
on to the abdomen and crossed and descended the other leg down to the foot. At the same time it spread up the back and down the arms, and on October 24th, the fingers of both hands were the only parts affected. But two days later, she had a recurrence on the vulva and buttocks and this spread down the thighs. From November 1st to 14th, she appeared to be quite free and had no temperature, but on the 15th, both feet recurred but did not last long. On the 22nd, she had another recurrence in the feet which spread a short way up the legs and then subsided and she was discharged on December 9th having been in Hospital for eleven weeks.

Case 71 is also Erysipelas Migrans. This case was unusual as commencing behind the right ear, the condition spread down the neck, between the shoulders and as low down as the small of the back. It then stopped spreading in that direction, but went down the arms from the shoulders, and at the same time affected the left ear, and from there went on to the face, the whole of which was affected, and also the scalp, and then subsided. Most cases starting from an ear pass on to the face at once, but in this case the face was the last part to be affected.



Case 7.

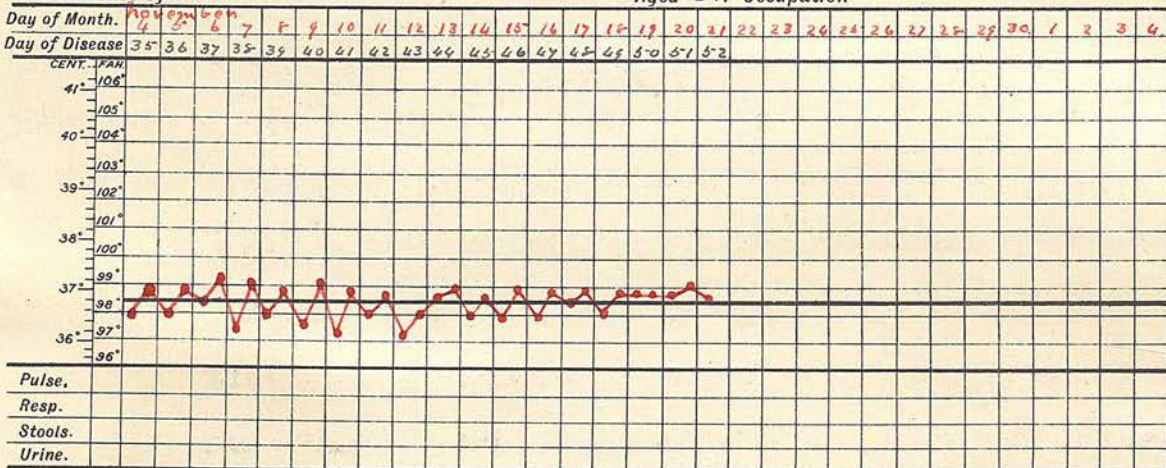
Records of Temperature, Pulse, Respiration, Stools and Urine, from Day of 18  
In the case of Mrs 7. Aged 61, Occupation



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Case 7.

Records of Temperature, Pulse, Respiration, Stools and Urine, from Day of 18  
In the case of Mrs 7. Aged 61, Occupation



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Case 7 was a case of Post Operative Erysipelas. Patient, a woman of 61, was operated on for Scirrhus of the right mamma, the whole of the breast along with the pectoral muscles being removed and the axilla cleared out, on September 13th. On October 1st, erysipelas started in the wound and she was removed to the City Hospital on October 4th. The edges of the wound were widely apart, exposing the upper 5 or 6 ribs and the intercostal muscles from the edge of the sternum to the anterior axillary line. The axilla was freely open and there was a sinus made for drainage purposes in the posterior axillary wall. The whole wound was discharging pus very freely. There was a bright red erysipelatous flush extending from the wound all over the back as low as the sacrum and as high as the back of the neck, and also over both shoulders, the left breast, and a little way down each arm. There was a very definite raised margin on the left upper arm which was acutely painful. She was in a very collapsed condition on admission. She was freely stimulated and the wound douched daily with Boracic Lotion and with Creotin. During the first ten days her condition was very critical. She was extremely/



ly weak and was barely able to endure the daily dressing of the wound. She was very restless at times and alternated between coma and delirium. The erysipelas advanced a little further down the left arm and then gradually disappeared. Her general condition improved, the wound became clean and covered by granulations, and she was transferred on November 21st, after being with us for seven weeks, to another Hospital where skin grafting was done and she has done well since. This case is recorded as showing how recovery is possible even in most extensive and severe erysipelas, especially when, as in this case, there is free drainage.



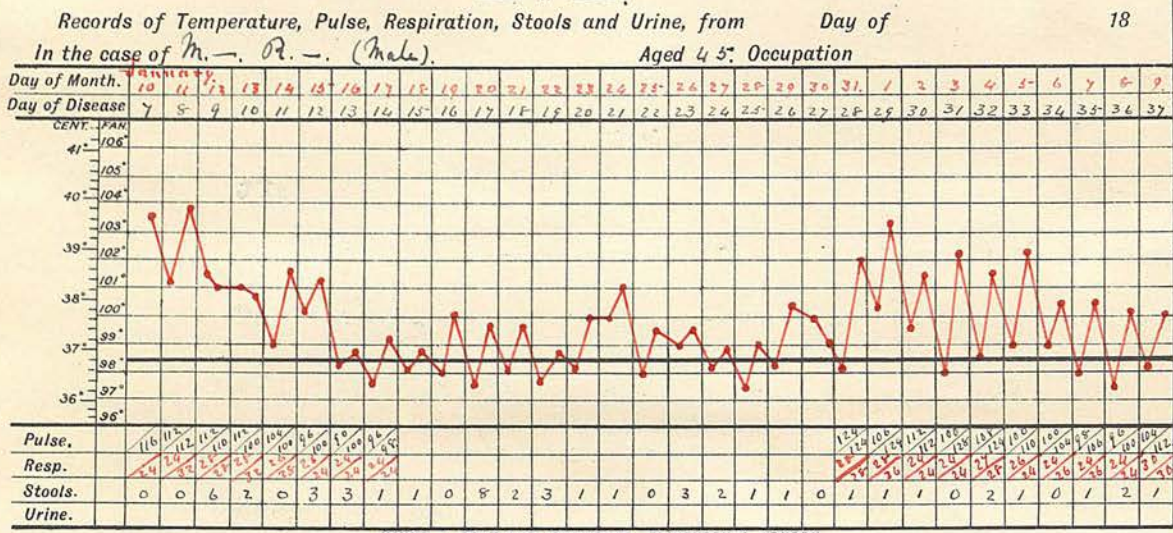
# VIII. THE COMPLICATIONS OF ERYSIPELAS.

## I. Phlegmonous Erysipelas.

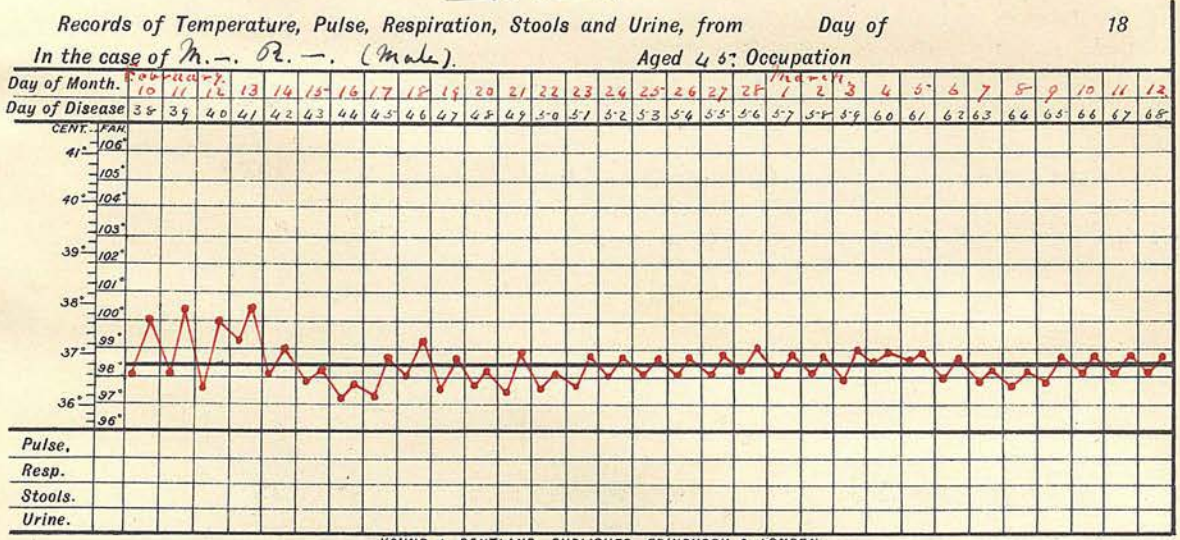
This condition, as stated before, should be considered as true Erysipelas complicated by Suppurative Cellulitis and is due to the *Streptococcus Pyogenes* invading and affecting all the tissues from the skin down to the level of the muscles. It is always caused by a wound. In addition to the cutaneous erysipelatous condition of redness, swelling, heat, pain, and bullae formation, there is suppuration which may be very extensive. Such cases are very severe, and may end fatally unless promptly treated. The swelling is sometimes enormous and the distended skin may give way, leaving irregular ragged ulcers through which a large amount of pus discharges. A characteristic feature is the formation of large sloughs, which have been likened to pieces of chamois leather which are discharged through the openings and leave the actual muscles exposed. There is much toxaemia and coma is common. Owing to the condition reaching below the fascia, localised abscesses frequently form. When recovery takes place, there is considerable cicatrization and adhesion formation and the/



# Case 76.



# Case 76.





the movements of the affected part may be much impaired. Phlegmonous Erysipelas usually occurs in the limbs and is specially apt to follow a wound which has been allowed to close up and prevent any drainage.

Case 76 was one of Phlegmonous Erysipelas.

Patient, a man of 45, received a wound on the left elbow on January 4th. The same evening he had some shivering. On January 6th, he complained of headache and pain in his arm which was also swollen and red. Admitted to Hospital on January 11th, a week after the injury. The left arm was enormously swollen from fingers to shoulder, was a brilliant red colour, and had numerous large bullae in it, some of which had burst and dried up and formed crusts. An incision had been made over the olecranon down to the bone and some pus was discharging from it. The skin had broken down on the dorsal aspect of the wrist joint and in the bend of the elbow and there were deep, irregular ulcers there discharging freely. There was another similar ulcer, but much larger about three inches by one, in the humeral wall of the axilla. Patient was hardly conscious and was very much collapsed. His temperature was swinging between 101 and 104.

For/



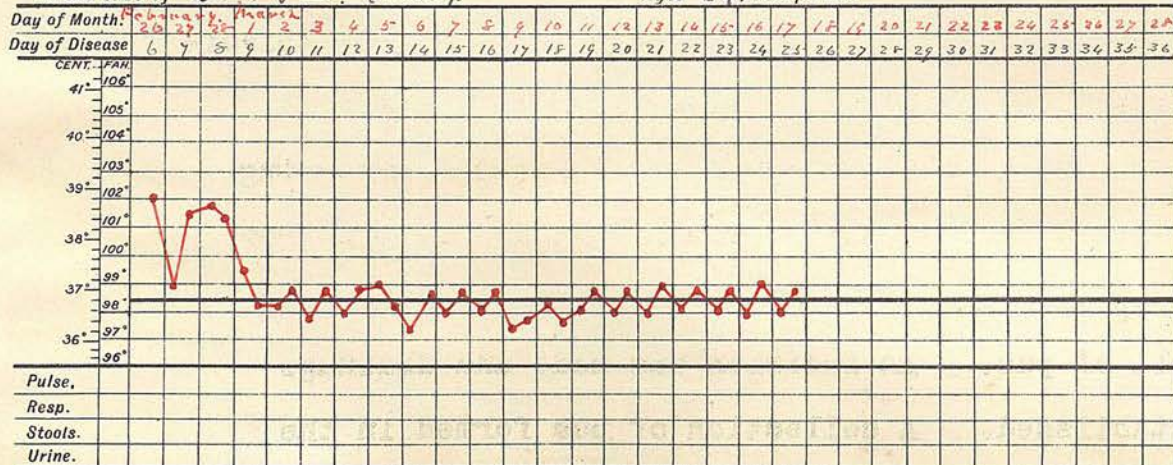
Case 74.

Records of Temperature, Pulse, Respiration, Stools and Urine, from 26<sup>th</sup> Day of February

1802

In the case of W. J. (Male).

Aged 24. Occupation





For the first week his condition was very critical and he was comatose most of the time and looked very poisoned. His arm was kept in a continuous bath of Mercuric solution, and four incisions were made through which much pus drained away. At times, he had much pain which required morphia. On January 23rd a large collection of pus which had formed over the shoulder was incised and evacuated. After that the condition gradually cleared up, huge sloughs being formed and discharged through the numerous drainage openings, and the exposed muscles became covered by granulations and the skin healed over. He was discharged on April 8th, his arm quite healed but with some impariment of movement at wrist and elbow joints.

Case 74 was somewhat similar but not so severe. Patient, a man of 24, wounded his hand with a hammer on February 21st. The same night he had some shivering and the hand was swollen and red. Admitted on the 26th, with phlegmonous erysipelas affecting the hand, wrist and forearm. Pus was oozing from the wound and a large bleb close to the wound was full of pus. An incision was made and drainage established. A collection of pus formed in the forearm/



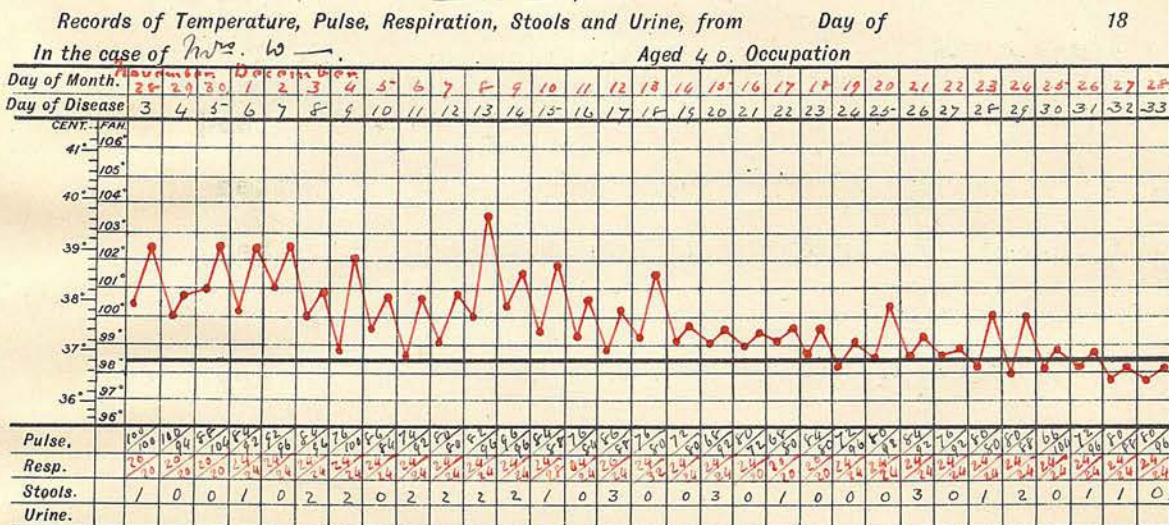
forearm and was incised on March 4th. He made a good recovery and was discharged on April 8th, the arm healed but movement at the wrist impaired.

## II. Chronic Oedema.

Sometimes, and especially in elderly people, erysipelas of the limbs is followed by a sort of chronic solid oedema when the hyperaemia and pain of the erysipelas goes, but the swelling remains, like an elephantiasis, and supposed to be due to a blocking of the lymphatic channels perhaps by coagulated lymph, and prevention of absorption. Two of my cases had this condition, one in the foot and the other in the hand and wrist. Both were cases of Erysipelas arising without any visible wound. In the hand and wrist case, the patient was a woman of 63, and after the acute stage of the erysipelas was past, the swelling remained and her temperature rose to 100 or 101 every evening for four weeks. It then remained normal for five weeks, but the swelling did not diminish and she had a certain amount of pain in the wrist. Thinking the joint was affected, she went to the Infirmary and her wrist was opened. No necrosed bone was found, nor anything abnormal except a general thickening of the tissues and/



Case 42





and the wound was closed again.

Case 42 is the other case. Here the Erysipelas was limited to the dorsum of the foot and did not extend above the ankle. Her temperature was raised for a long time and the swelling of the foot lasted still longer, but eventually yielded to rest in bed, pressure by bandages, and massage. She was admitted on November 28th, and discharged on February 10th.

### III. Cutaneous Abscesses.

These may occur on the head, trunk or extremities. Lenhartz records 9 in 140 cases, and 4 of these were in the eyelid. In my 61 cases there were 6, and 4 of these were in the eyelids, the other 2 being, 1 beneath the lower jaw, and the other on the scalp. They are much more common in traumatic cases, 8 of my 19 having them.

### IV. Otorrhoea and Otitis Media.

Discharging ears are not common. They may arise either from extension from the face to the external ear, or by extension from the throat to the middle ear. Two of my cases had this complication, both were face cases and in both the ear began to discharge after the face condition had cleared up/

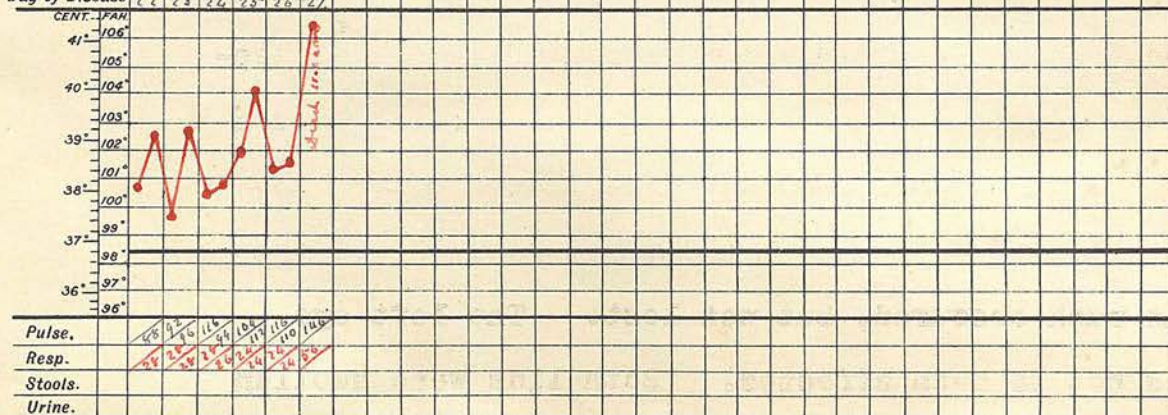


Case 66.

Records of Temperature, Pulse, Respiration, Stools and Urine, from Day of  
In the case of Mrs. L. Aged 30. Occupation

18

Day of Month. March.  
Day of Disease 18 19 20





up, and was followed immediately by a severe relapse of facial erysipelas. In neither case was there any throat condition.

#### V. Meningitis.

A purulent meningitis may arise through the middle ear or through the orbit. Lenhartz records a case of the former, and two cases of the latter are recorded in the reports of the Prussian Army out of 1500 cases of erysipelas. One of my cases died from this cause.

#### Case 66. - Retro-Bulbar Abscess and Purulent Basal Meningitis.

Patient, a woman of 30 years, was admitted on March 15th with a history of having had Facial Erysipelas three weeks ago. On admission this had all cleared up with the exception of the eyes, both of which were affected. The right eye was completely closed, the upper lid much swollen and felt solid rather than fluctuating, the lower lid was also distended and felt much softer and more like fluid. On separating the lids, which were glued together with a yellowish secretion, the conjunctiva was seen to be much injected and markedly oedematous. Sight was much obscured, but not lost. The left eye was not so much affected. Both lids were swollen but/



but the skin was not distended and was puckered as if the swelling was subsiding. The eye could be opened and sight was good. Patient complained of no pain in the eyes. A hypodermic needle was put into both lids of the right eye, but no pus was obtained.

During the next few days there was little change to note, but on the night of the 19th, she moaned a little in her sleep and had some retching but no vomiting. About midnight, her breathing became stertorous and she passed into a state of coma and died at 11 a.m. on the 20th.

A post mortem examination was made, and on removing the brain, pus was found welling up through the opening in the dura mater, which transmits the third nerve, on both sides, and covering the base of the brain. On removing the roof of the orbits, the same condition was found on both sides, a collection of pus behind each eyeball about the same size as the eyeball, and passing through the sphenoidal fissure with the third nerve to the base of the brain.

In this case, the exophthalmos which must have been present, was obscured by the great swelling of the lids so that it was not noticed. It is more usual/



usual for the suppuration to follow the optic nerve, but in my case it accompanied the third nerve which would account for the sight being but little affected. Films taken from the pus in the orbit, and the base of the brain showed under the microscope that streptococci were present.

#### VI. Respiratory Complications.

Pneumonia, both Lobar and Lobular, occasionally occurs as a complication of erysipelas, but none of my cases experienced it .

# IX. RELAPSES AND RECURRENCES.

In no infectious disease is the tendency to recur so great, as in Erysipelas. One attack, instead of protecting, appears to predispose the individual to another. Certain people have periodic attacks of erysipelas every year, generally in the spring or autumn, and it is these attacks, which are called recurrences. Relapses follow the first attack within a few days or weeks and are probably due to a fresh outburst of activity of the organisms of the original infection, which are still in the tissues. Recurrences are probably due to a fresh infection, but many cases occur which are very hard to differentiate into relapses or recurrences. It is nearly always facial cases in which relapses occur. None of my other cases had a relapse, but of my 63 face cases, 13 had relapses. Of these,

1	had	5	relapses	in	hospital	and	1	after	leaving
1	"	3	"	"	"	"	"	"	"
2	"	2	"	"	"	"	"	and 1	after leaving.
9	"	1	"	"	"	"	"	"	"

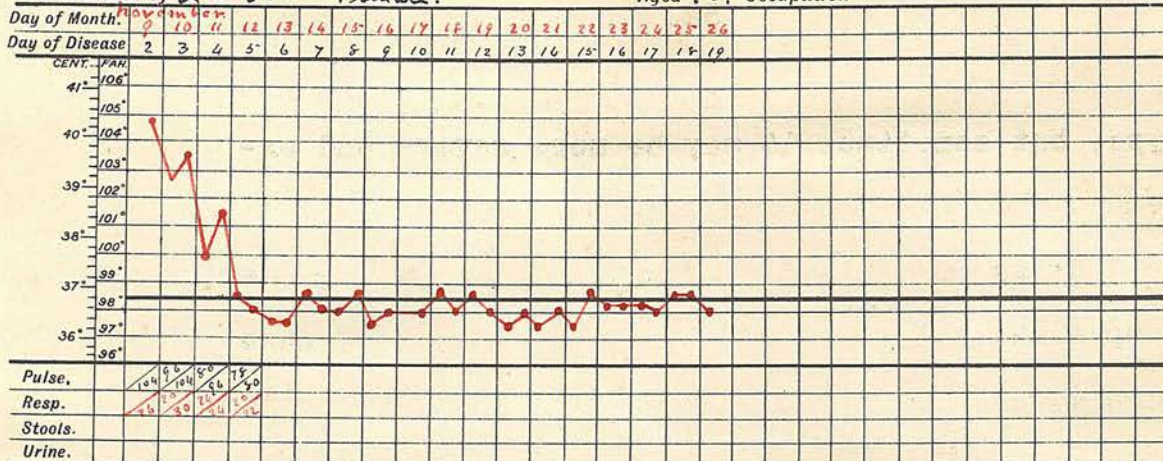
As a rule the relapse affects the same parts as the original attack and is generally of a milder type/



# Case 17.

Records of Temperature, Pulse, Respiration, Stools and Urine, from Day of  
In the case of L - B - Female. Aged 15. Occupation

18

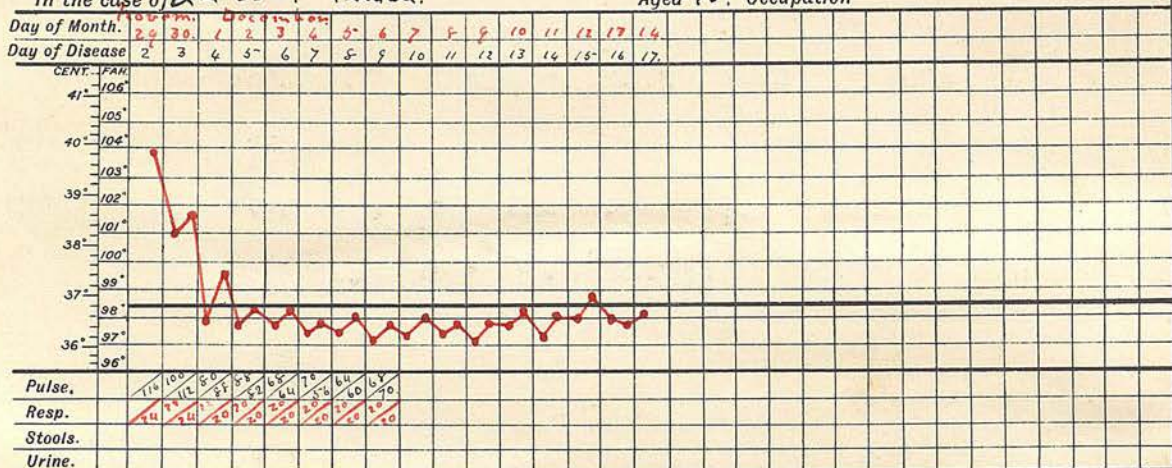


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# Case 17.

Records of Temperature, Pulse, Respiration, Stools and Urine, from Day of  
In the case of L - B - Female. Aged 15. Occupation

18

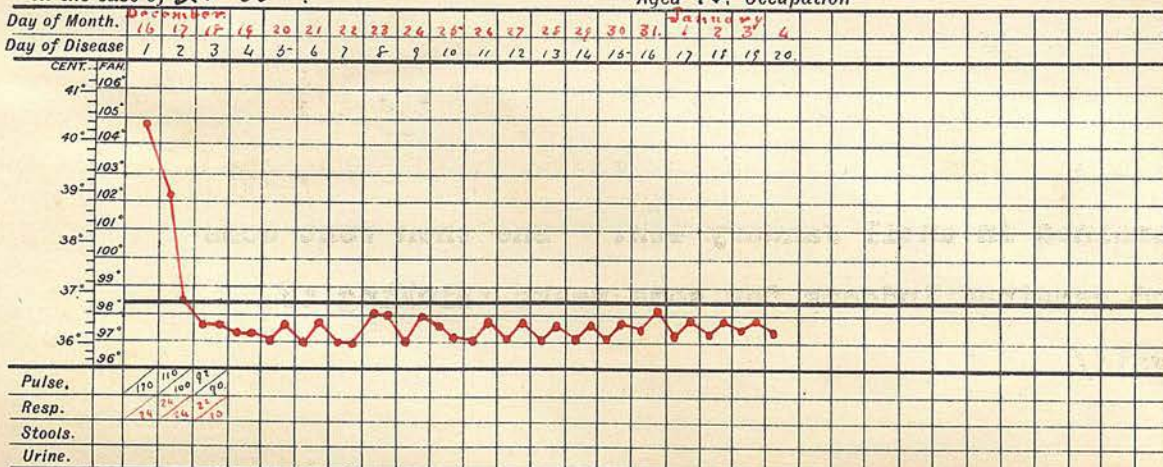


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# Case 17.

Records of Temperature, Pulse, Respiration, Stools and Urine, from Day of  
In the case of L - B - Female. Aged 15. Occupation

18



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type, but sometimes it may be more severe and extensive.

Of my 13, in 6 cases the relapses were milder, 3 were about the same as the first attack, 5 were more severe and 1 of these ended fatally.

Case 17 is typical of mild relapses.

Patient, a girl of 15, had Facial Erysipelas in April 1901. During the summer she was free from it, but in November 8th she felt sick, and on the 9th, her face was swollen, starting from the right eye. She was admitted to Hospital that day with typical facial erysipelas. She had a mild attack and was sent to a convalescent home on November 26th.

Two days later she complained of pain and swelling under the right eye and on November 29th, she returned to Hospital with a precisely similar attack of facial erysipelas as on the 9th. This was of shorter duration and she was discharged on December 14th.

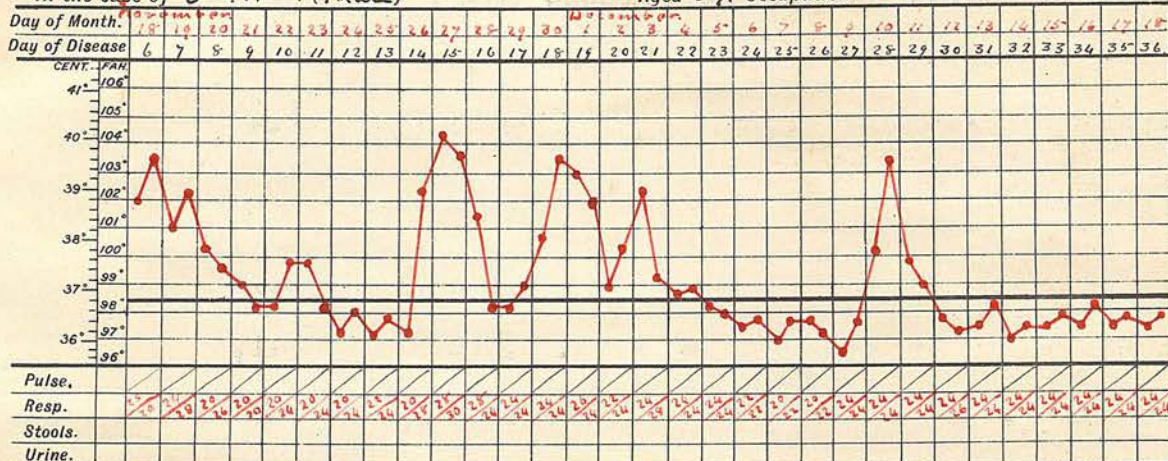
On December 16th, she returned to Hospital with a second relapse, which was soon over and she remained in until January 4th. She then went home and remained indoors for some weeks thinking to avoid/



Case 20

Records of Temperature, Pulse, Respiration, Stools and Urine, from Day of  
In the case of S. H. (Male) Aged 5-7. Occupation

18

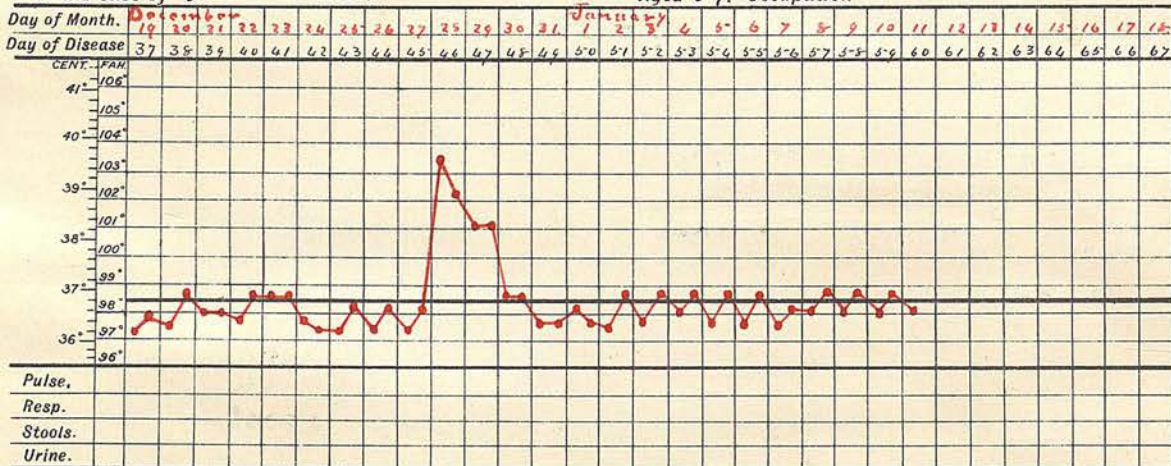


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Case 20

Records of Temperature, Pulse, Respiration, Stools and Urine, from Day of  
In the case of S. H. (Male) Aged 5-7. Occupation

18



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avoid the cold, and had no relapse until she ventured out and travelled to Lanark, where she immediately developed another attack of which I can give no account.

Case 20 was another case with mild relapses. On November 13th, patient's right eye was painful, red and swollen. Admitted on November 18th with erysipelas affecting both cheeks and eyes and forehead.

On the 22nd it appeared to be quite cleared up. On the 26th it began again around the right eye and both eyes were closed up and forehead and cheeks affected.

On the 28th, it was all gone.

On the 30th the face was again affected.

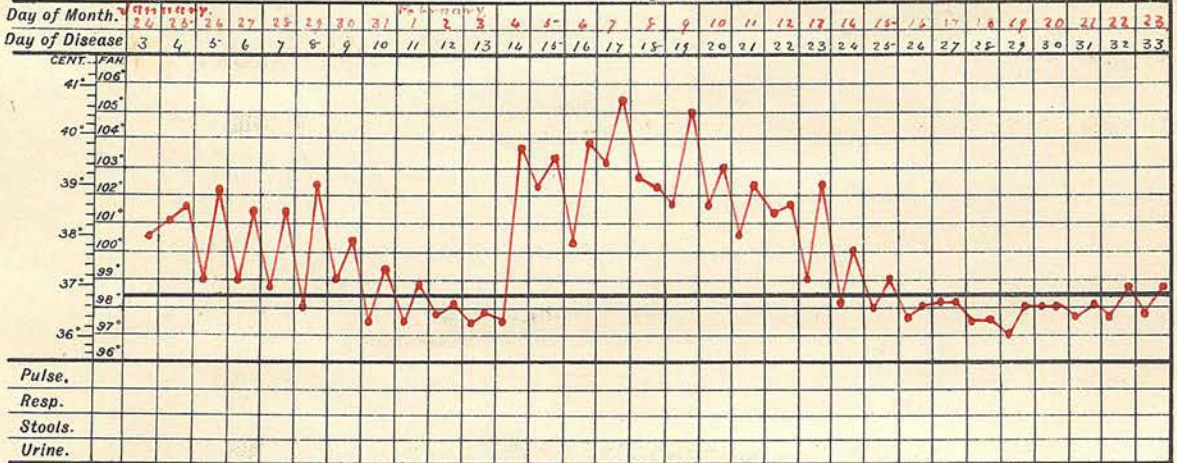
On the 2nd the face was clear, but on the evening he had a rigor and sickness and next morning the eyes were again closed up and the right ear affected. After six afebrile days the temperature rose again on the 10th and he had a relapse about both eyes again. Then occurred an interval of 12 afebrile days and in the early morning of the 28th, he had a rigor at 4 a.m., vomited at 7 a.m., and his right eye was again affected and the erysipelas involved/



# Case 49.

Records of Temperature, Pulse, Respiration, Stools and Urine, from Day of  
In the case of S. C. (Male). Aged 21. Occupation

18



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involved the whole face. He was discharged on January 10th, and the very next day had another relapse at home. Up to March 16th, he had had no more.

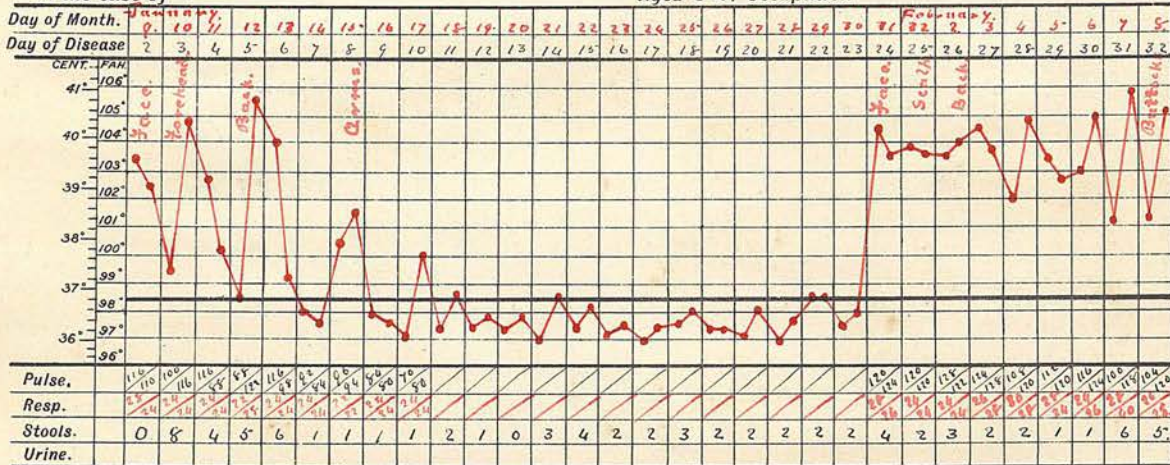
Case 49 had a relapse of greater severity than the original attack. Patient had not had erysipelas before. On January 22nd, he felt cold and sick. On the 23rd his face began to swell, starting from the right nostril. He was admitted to Hospital on the 24th with nose and cheeks swollen and red and a few small blebs on them. The condition subsided quickly and on the 26th, his face appeared quite clear, but his temperature continued to rise every evening though nothing could be found to account for it. On February 2nd and 3rd his temperature did not rise above normal but on the evening of the 4th he complained of feeling cold and his temperature at 8 p.m. was 103.6 and he had some pain in the nose, which was slightly swollen. Starting again from the right nostril, the erysipelas spread over the whole of the face and scalp. The ears also were completely closed and the eyelids enormously distended and looked as if likely to burst. There was slight delirium. After remaining up for ten days, the temperature reached normal on February 14th/



Case 61.

Records of Temperature, Pulse, Respiration, Stools and Urine, from Day of  
in the case of *Mrs. W.* Aged 34. Occupation

18

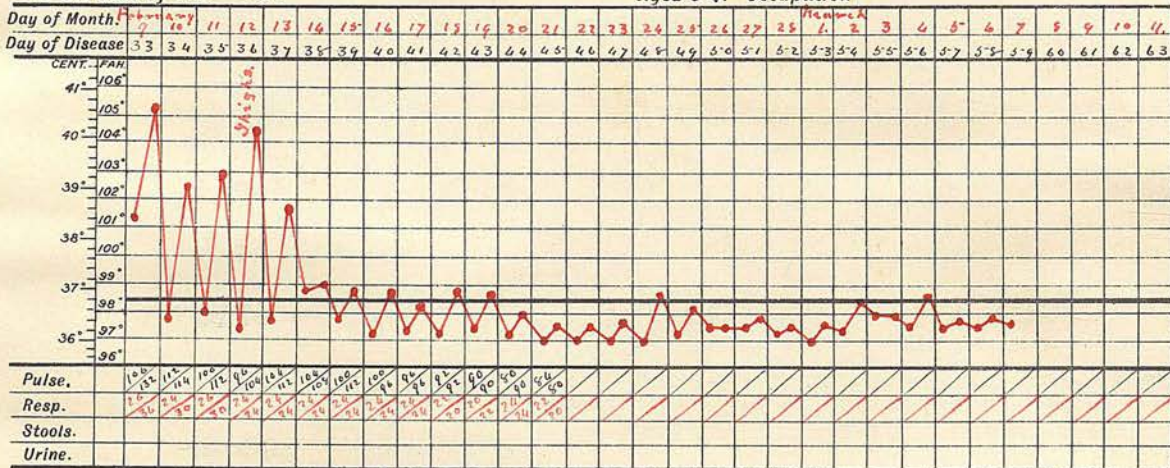


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Case 61.

Records of Temperature, Pulse, Respiration, Stools and Urine, from Day of  
In the case of *h. m. w.* Aged 34. Occupation

18



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14th and he made a complete recovery. The swelling of the eyelids subsided without bursting or being opened. He was discharged on March 1st

Case 61. - Facial Erysipelas with severe Relapse.

Patient was admitted on January 9th with a history of having had facial erysipelas for four weeks, starting immediately after her confinement, and which had cleared up and relapsed again several times, but had never entirely left her.

On admission, both eyes, cheeks, and left ear were affected. Her temperature was 103.4. Next morning it was lower, but rose again at night and there was a fresh spread up forehead. On the 12th her temperature was normal in the morning, but at 3 p.m. she had a rigor and the erysipelas began to spread down the neck and on to the back and at 8 p.m. her temperature was 105.6. Her face at this time had cleared up; a small abscess in her right eyelid had burst and discharged pus. On the 15th, there was a further spread down arms and a rise of temperature.

After that, she improved rapidly and was able to sit up in the ward and was preparing to go home.

On/



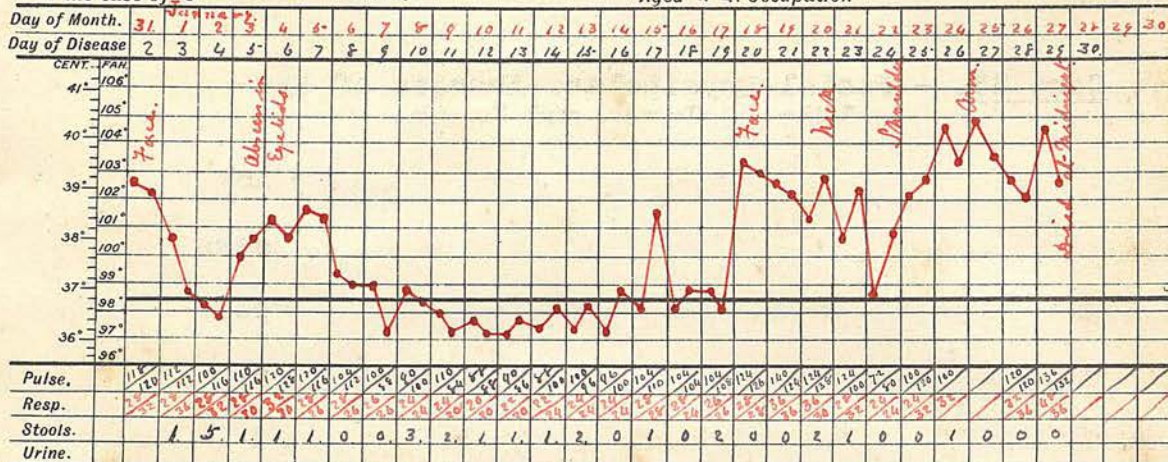
On the evening of the 30th, her temperature was normal and she felt perfectly well, but during the night she had a rigor and in the morning of the 31st her temperature was 104.6 and the whole of her face was again affected, both eyes closed up and eyelids much distended. This was a very severe relapse lasting for 15 days. Starting from the eye, it spread over all her face, except the chin, passed up on to the scalp, then went down her neck on to the back as far as the buttocks and just on to the thighs. It also spread on to shoulders and arms. In this case, the skin wherever affected was raised into little nodules giving it a hobnailed appearance. The tendency to form blebs was very marked. During the last three days of the fever, her condition was very serious and she appeared to be almost moribund. She was extremely weak and unable to move herself; her pulse was very feeble and she vomited after every attempt at food. On February 14th, her temperature did not rise above 99, and she made a complete recovery and was discharged on March 7th, her temperature having been normal for three weeks. She was never entirely unconscious, but had numerous delusions.



# Case 35.

Records of Temperature, Pulse, Respiration, Stools and Urine, from Day of  
In the case of S. B. (Male). Aged 44. Occupation

18

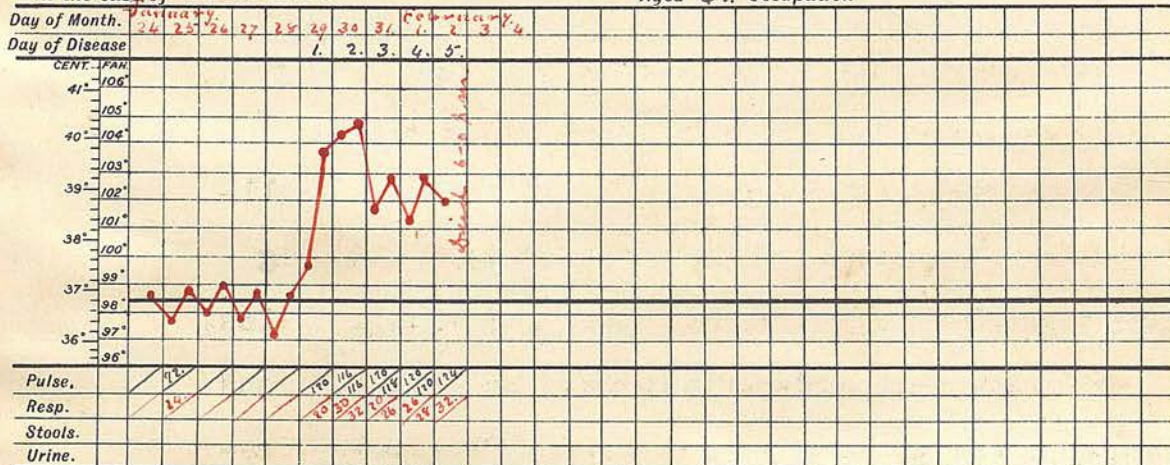


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# Case 40.

Records of Temperature, Pulse, Respiration, Stools and Urine, from Day of  
In the case of R. C. Aged 41. Occupation

18



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Case 35. - Facial Erysipelas, Abscess of Eyelids, Relapse and Death.

Admitted to Hospital on December 31st. His attack was not a severe one, but was complicated by Abscess in right upper and left lower eyelids. His temperature came down on January 8th, and with one exception remained down until January 18th when he had a severe relapse which, starting from the eye, spread on to face, neck, shoulders and arms. He gradually got weaker and died on January 27th from exhaustion. He was in very bad health and had had Rheumatic Fever eighteen months previously, since when he had spent most of the time in Hospitals for cardiac disease. A post mortem examination could not be obtained.

Case 40. - Facial Erysipelas ending fatally.

Patient, a woman of 41 was admitted to Hospital on January 24th with a doubtful history of a swelled face ten days ago. There was slight swelling about the eyes, but no definite signs of erysipelas.

She had most extensive pediculosis capitis and her scalp was covered with crusts. These were removed with starch poultices and her head attended to. On January 29th, she began an acute attack of erysipelas, which, starting from the abrasions on the scalp, spread down the forehead and involved the/

the whole face. On February 1st, she became unconscious, her pulse was very feeble and did not respond to stimulation and she died next day.

Post mortem no gross lesions were found, but the whole body was ill developed and badly nourished. She had been subject to Epilepsy since 14 years old, and her father had died in an Asylum. She, herself, appeared to be of feeble intellect.



## X. DIAGNOSIS

The chief points which aid in the diagnosis of erysipelas are the appearance of the skin, the rapid advance by unbroken continuity, the sharply defined border, the formation of bullae, the temperature, and perhaps most important of all, the pain at the advancing edge. In Phlegmonous Erysipelas the presence of a wound is essential. In facial erysipelas, the type and duration of the fever, and the subsidence of the swelling without pointing and discharge of pus, will decide the diagnosis in doubtful cases.

## XI. PROGNOSIS AND MORTALITY.

In erysipelas occurring in healthy individuals the prognosis is always good, but the possibility of relapses and recurrences must always be remembered. In new-born infants, where erysipelas may start from the umbilical cord, and in puerperal women, the prognosis is not so good. Erysipelas migrans also is more serious, as the fever lasts longer and the patient's strength is more greatly taxed. Trousseau regards death in erysipelas as due to one of three causes, "Coma consequent on effusion within the head; asphyxia owing to oedema of the glottis; or asthenia." In the six of my 80 cases who died, one died from coma/

coma due to meningitis, and the other five from asthenia. Of these five one was an epileptic, three had cardiac disease, and the other one had a fractured arm.

Trousseau says, "l'érysipèle est donc une de ces affections qui guérissent d'elles-mêmes, je parle de l'érysipèle qui surprend l'individu en bonne santé, et non plus de celui qui survient dans le cours d'autre maladies."



XII. TREATMENT.

In no other disease with the exception perhaps, of whooping cough, have more remedies been tried and with as little success than in erysipelas. At the same time there is no disease in which the natural tendency to recovery is stronger and treatment has, therefore, been limited to attempts to cut short the disease rather than to cure it.

Internally Iron, Quinine and Salicylate of Soda are the three drugs that have been most used, but as far as my experience goes they have no effect whatever on the course of the disease. This is also the experience of Lenhartz, who says "I have practically discarded internally remedies." Amongst methods of local treatment the following are the ones most commonly advocated:--

Strapping with strips of adhesive plaster at some distance from the erysipelatosus area with the object of preventing the spread of the streptococci in the lymph spaces. This method advised by Wolfer and which produced very good results in over 60 cases which he reported in 1891, I have not been able to try, as very few of my cases were suitable ones for its adoption. Lenhartz has tried it, but his experience has led him to give it up, and his criticism of/

of it is, "The method does no harm if it is carefully watched and the great swelling near the strip is not allowed to go on to necrosis." Niehaus paints a broad band of collodion with the same object of arresting the march of the streptococci. Painting a band of the liniment of iodine in advance of the spreading erysipelas is also much recommended in this country, it being supposed to set up a local inflammation and stop the advance. In three cases I tried this, and in the first where erysipelas of the face had spread to the scalp and down the back and shoulders and on to the chest, I painted the ring well in advance of the erysipelatous margin. In this case the ring was crossed for about an inch at one spot only. In the second case, a leg, the erysipelas spread over it and up the thigh and on to the body. In the third case the erysipelas had started at the back of the neck and gone down on to the shoulders and back, and here I painted a ring of iodine all round the trunk and round each arm. No further spread occurred down the body, but the face was affected most severely. I therefore do not think the method is of much use.

With the idea of excluding air from the affected parts, oil paint and varnish, and covering with rubber protective has been recommended.

The/



The following are the chief agents used for local application to the erysipelatous skin itself.

Ichthyol and vaseline.

Koch's salve of creolin, iodoform and lanoline.

Carbolic acid and alcohol in glycerine.

Corrosive sublimate and lanoline.

Resorcin and glycerine.

Absolute alcohol.

Turpentine.

Among these ichthyol is the most widely used and recommended. Nassbaum was the first to use it in 1887, and to report good results from it. Fessler in 1891 reported that out of 397 cases of erysipelas in the Munich Hospital, 53 were exclusively treated with ichthyol and in these the average duration of the disease was reduced to considerably less than with other methods of treatment. On the other hand, Lenhartz has not found it of any benefit and states that in spite of the uniform employment of the remedy he has observed not only a continuous advance of the disease in Erysipelas migrans, but also a fatal termination. About half of my cases were treated with ichthyol in vaseline 10 per cent., and whilst I believe it has some soothing influence and relieves the pain a little, I do not think it is of any effect in lessening the duration of the disease. One of the/

the most lengthy cases I had was treated throughout with ichthyol and the erysipelas continued for two months.

As dusting powders, oxide of zinc, starch, salicylic acid, lycopodium powder, subnitrate and subgallate of bismuth have all been used and are equally inefficient in arresting the disease.

In addition to these medical methods of treatment, surgical treatment has also been advised.

Huter uses subcutaneous injections of 2% carbolic solution. Kuster uses 1 in 1000 bichloride of mercury in the same way. Kraske recommends numerous punctures and scarifications, both in advance of the spreading margin and also on the erysipelalous skin itself, followed by the application of antiseptics.

The disadvantages of these methods are that in order to carry them out effectually the patient has to be anaesthetised on account of the pain caused, and that permanent scars are left behind. At the same time, I certainly think that surgical treatment is the ideally correct treatment of erysipelas, and might prevent the relapses which are so common in cases where there is no wound and so uncommon in cases following a wound where there is free drainage.

In my 19 cases which followed a wound, only one had a relapse and in his case the wound in the scalp had/



had been allowed to heal and drainage had ceased. My 12 other cases who had relapses were all without wounds.

In erysipelas of the limbs I would certainly advise incisions to be made, but in face cases it is difficult to know where to make the incisions and the possible disfigurement has to be considered. The danger of allowing a mixed infection in this way has been, I think, overestimated, as it should be quite easy to prevent it.

So far as my experience goes I am of opinion that no local or general remedy has any prospect of arresting the disease with the possible exception of surgical treatment, which is seldom possible.

But much can be done to improve the condition of the patient and lessen the discomfort, and I have found that boric vaseline gently rubbed into the affected parts or spread on a mask of lint and laid over the face in facial cases, softens the skin, prevents the formation of crusts, and greatly lessens the pain and discomfort. I think this is much the best application for the face, but when the Erysipelas spreads down the back, where as a rule the tendency to form blebs is not so great, a dusting powder such as starch and boracic acid is very satisfactory.

Rest in bed is, of course, essential. Warmth is also important. Patients with erysipelas are particularly/

particularly susceptible to cold, and cotton wool to wrap their limbs, or roll their heads in gives them great comfort.

A small dose of Calomel followed by a dose of salts is advisable at the commencement, and I have had no serious diarrhoea caused by this in my cases. Alcohol in the form of brandy or whisky is generally indicated during the fever, and digitalis, strophanthus, or strychnine should be given if the pulse is failing at all, and are often wanted about the crisis.

The diet should be more nourishing than what is generally known as fever diet. Erysipelas is an extremely weakening disease and therefore a sustaining diet is necessary. Milk, chicken tea, beef tea, brandy and egg mixture may all be given from the commencement, and custard, fish and chicken as soon as the patient can be persuaded to take them. Trousseau laid great stress on the value of nourishment in the treatment of erysipelas and his words are worth quoting:- "J'alimente, j'alimente alors même qu'il y a de la fièvre, alors même qu'il y a du délire ... au lieu de les tenir à une diète rigoureuse, je reste spectateur de la lutte de laquelle, je le sais, la nature sortira victorieuse, si je ne la trouble pas dans/



dans ses opérations; je me tiens les bas croisés: et, je le répète, parmi la grand nombre d'érysipèles que j'ai vu, trois tout au plus, ont eu une terminaison fatale; dans tous les autres cas la maladie s'est éteinte d'elle même."

In Phlegmonous Erysipelas the only possible method of treatment is surgical. This varies in each case, but the essential point is to establish free drainage. Thus, in mild cases, simply cleaning of the wound and dressing with antiseptic gauze may be sufficient. In more severe cases, numerous incisions may have to be made, their site being chosen suitably for draining and convenient for dressing. In very severe cases, in addition to incisions, a continuous antiseptic bath is of use. In these cases especially, much attention be paid to nourishment and stimulation.

Cutaneous abscesses require to be opened in the usual way.

Insomnia without delirium generally yields to treatment with bromide or paraldehyde. Delirium is best treated with bromide and chloral, or hyoscine if given with caution. Hyperpyrexia may occur and is better treated by sponging than by giving antipyretics. Vomiting is sometimes very persistent in severe cases and for this, iced milk and iced brandy, or/

or nutrient ennemata may carry the patient on until the condition improves.

Treatment by Antistreptococcus Serum.

Antistreptococcus serum was first produced by Marmorok at the Pasteur Institute, and was first used on a large scale by Chantemesse, who treated 501 patients and reported that this treatment was "productive of more favourable statistics than every other therapeutic measure." But Bolognesi and Roger state that equally good results have been obtained "by the most simple treatments." Cheyne and Burghard recommend its use, but admit that "it is only on its trial and so far, the results are not very encouraging."

Lenhartz distinctly advises against its use. His experience has convinced him of "the absolute inefficiency of the serum" and that "the most disagreeable after effects may follow the employment of this remedy."

Because of the great difference of opinion amongst those who have used it, but chiefly because the great majority of cases of erysipelas recover without its help, I have not tried the antistreptococcic serum in any of my cases.



XIII. PROPHYLAXIS.

Erysipelas is essentially a disease associated with dirt, uncleanness, and conditions of bad hygiene. It is extremely uncommon amongst the better cared for classes, and nearly all cases occur amongst the poor and those who live in insanitary surroundings. Therefore, all improvements in sanitation and public health will tend to lessen the prevalence of the disease. Epidemics of erysipelas occur, as has been the case in this last winter of 1901-1902, the number of cases treated in the City Hospital being very much larger than in former years. Erysipelas having only recently been notifiable, figures are not available for Edinburgh, but in Leith, the cases notified from October 1901 to March 1902 are nearly double those notified in the corresponding months of the previous year, being 99 as compared with 54.

Since Erysipelas is undoubtedly contagious, (innumerable instances have been recorded) and since it is able to give rise to other streptococcic diseases, such as puerperal fever, it is evident that notification and isolation must be conducive to the public health, and should be the rule in every community.